$2.95

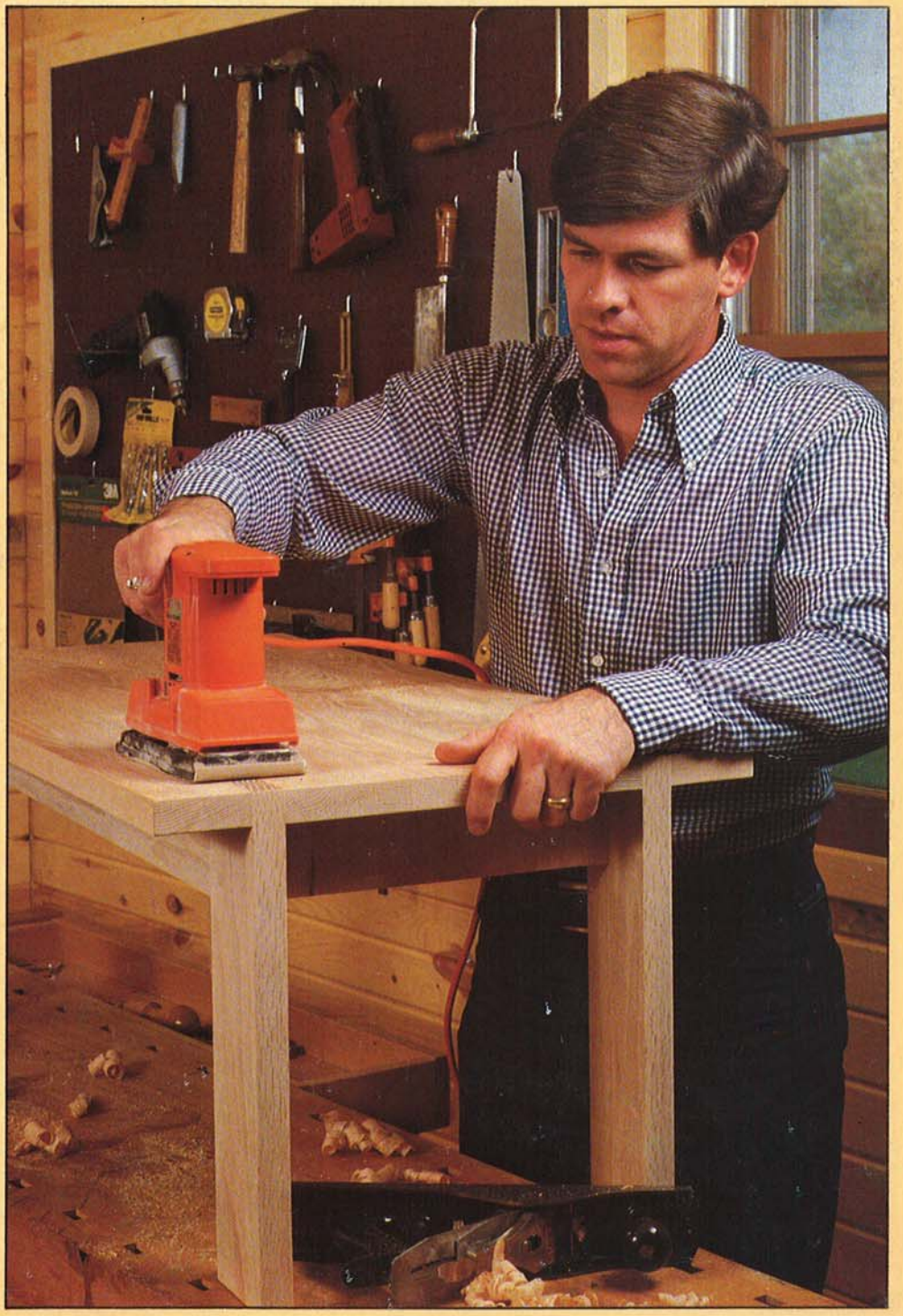
Better Homes and Gardens®

WOOD

SEPT/OCT • 1984 • ISSUE NO. 1

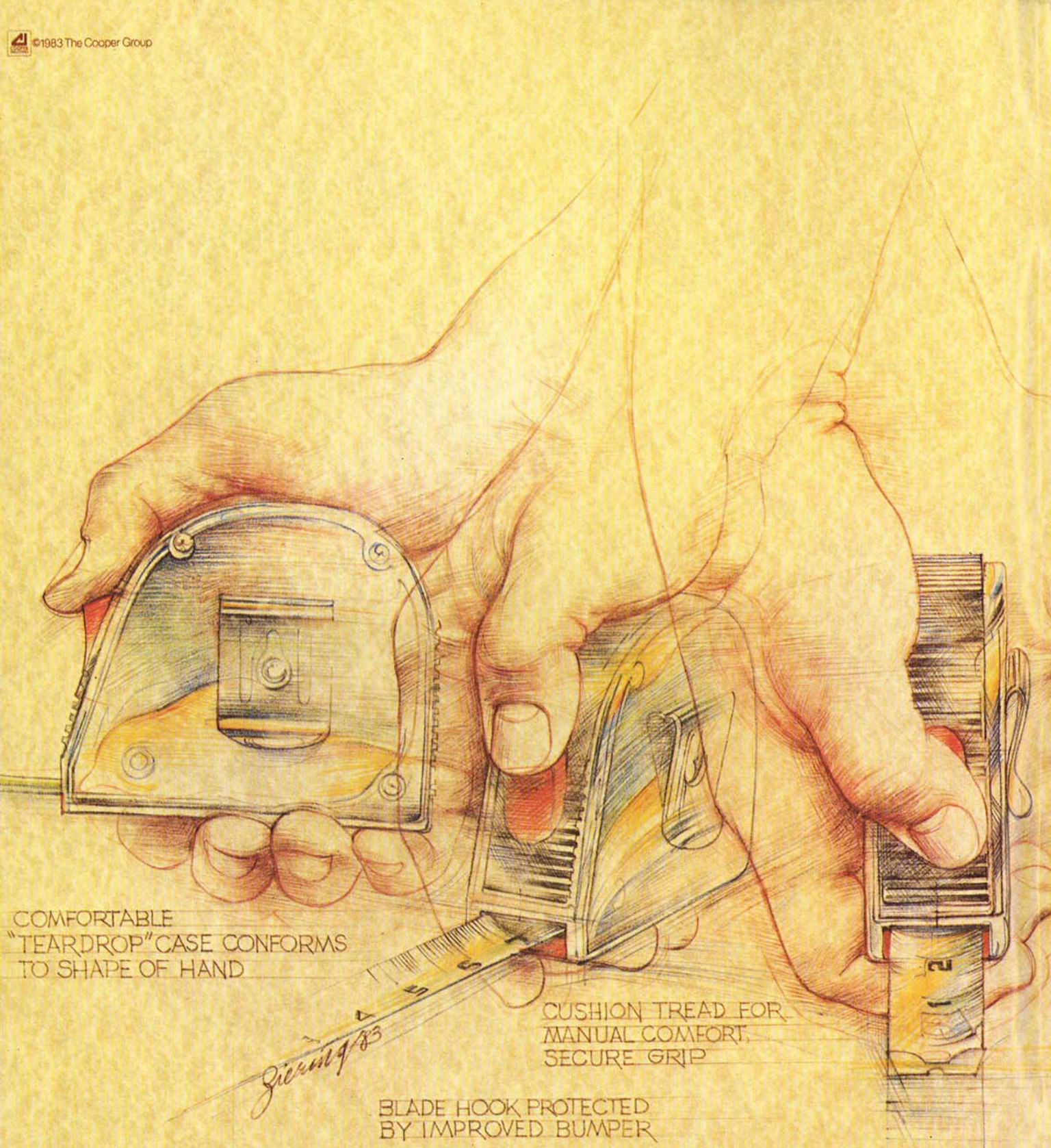
THE MAGAZINE FOR HOME WOODWORKERS

- **ROUTERS** WOOD tests 8 best-selling models
- **11 great projects** complete plans
- **Step-by-step** to edge-joining boards
- **Make a classic** our brass-bound marking gauge
- **Paste varnish** a tough, easy-to-apply finish
- **Build** The "Sunshine Express" kid's wagon



0 14005 14072 09

©1983 The Cooper Group



Introducing the Lufkin® that works the way

Don't make a fist. Just fold your fingers over, as if you were holding something in your palm.

See how your hand tapers toward your index finger? The same way our new Lufkin XL tapers from back to front.

But that's only one of the improvements we've built into this design.

The XL's slip-resistant tread gives you a much improved grip.

The sculpted lock-button puts control of the blade literally under your thumb, and the blade itself will give you almost 8 feet of unsupported extension.

We even improved the durability we're already famous for – by building more yield into the tape's built-in shock absorber.

See, the idea wasn't just to build a tape that works the way your hand works, but a tape that would *keep* working the way your hand works.

CooperTools

The difference between work and workmanship.

XL, the first powertape your hand works.

Save $10,000 or more on your new home. Be your own builder.

No experience needed. Learn at home as NRI shows you how in professional Building Construction course

You can save from 10% to 50% of the cost of your new home by building it yourself. And NRI can show you how. NRI's new professional course in Building Construction teaches you what you need to know to be a building contractor. And you learn at home in your spare time. Whether you want to build your own home, get a better job, or start your own contracting business, NRI can get you started right.

From Site Selection to Landscaping

By being your own contractor, you save at least 10% of the cost of the typical home right up front. Then, depending on how much of the job you do yourself, you can save up to 50%. NRI takes you through the job from start to finish in 70 lessons full of photos and diagrams to make learning easy. You begin by learning how to pick the best site, learn to read blueprints, estimate costs, follow the job through right to the planting of shrubbery and trees.

Learn Pro Secrets

Nothing's left out. You learn the trade practices and secrets of the pros. Masonry, carpentry, roofing, painting, even plumbing, heating and electrical work. You learn what good work looks like, tip-offs to bad or sloppy work. How to supervise jobs...when to bring in specialists...trade and financial practices...how to keep your job moving on schedule.

Training Built Around Energy-Efficient Home

You learn better because NRI training is practical training. You get over 100 action projects from scale-model construction to building actual framing sections. Lessons and projects are coordinated with a contemporary energy-efficient home designed especially for NRI. You keep these plans to build your own home or select from more than 50 low-cost optional plans.

Includes Regional Seminar

As an exclusive service, graduates may participate in optional owner/builder seminar. You'll get expert advice on local building codes and conditions, meet builders, learn more about energy efficiency, receive tips on financing. There'll be demonstrations, insider info on remodeling, hands-on programs to take part in.

Send for Free Full-Color Catalog

There's much more to the NRI Building Construction Course. Send the coupon for your free catalog describing all lessons, projects, and opportunities in the building business. See how you can save big money by building your own home or earn big money by building for others. If coupon has been removed, write to NRI Schools, 3939 Wisconsin Avenue, Washington, D.C. 20016-9973.

NRI McGraw Hill

NRI Schools
McGraw-Hill Continuing Education Center
3939 Wisconsin Avenue
Washington, D.C. 20016-9973

Please rush me the one free catalog I have checked. I understand there is no obligation.

- ☐ Building Construction
- ☐ Air Conditioning, Refrigeration & Heating Courses with Solar Technology
- ☐ Automotive Mechanics
- ☐ Small Engine Service & Repair
- ☐ Electrical Appliance Servicing
- ☐ CB/Communications
- ☐ Color TV/Audio/Video Servicing
- ☐ Computer Electronics Including Microcomputers
- ☐ Industrial Electronics
- ☐ Data Communications
- ☐ Industrial Control & Robotics

All career courses approved under GI Bill. ☐ Check for details

Name (Please print) Age

Address

City/State/Zip

Accredited by the Accrediting Commission of the National Home Study Council

1335-094

Better Homes and Gardens®
WOOD
THE MAGAZINE FOR HOME WOODWORKERS

Sept./Oct. 1984 Issue No. 1

Editorial Director **DORIS M. EBY**
Publisher **ADOLPH AUERBACHER**

Editorial/Art Staff
Editor **LARRY CLAYTON**
Art Director **C.L. GATZKE**
Design Editor **JAMES R. DOWNING**
Features Editor **PETER J. STEPHANO**
Project Builder **JAMES E. BOELLING**
Administrative Assistant **DARLENE REYNOLDS**

Editorial Services
Executive Director **DUANE L. GREGG**
Director, Editorial Research **C. RAY DEATON**
Administrative Editor **ROSE ANDERSON**

Advertising Sales Director **JERRY KAPLAN**
Circulation **JERRY WARD**
Production **DALE SCHENKELBERG**

Publishing Group Officers
President **JACK D. REHM**
Senior Vice-Presidents
General Manager, Magazines **JAMES A. AUTRY**
General Manager, Books and Newspapers **FRED STINES**
Group Vice President, Editorial Director **DORIS M. EBY**

Corporate Officers
Chairman of the Board **E. T. MEREDITH III**
President **ROBERT A. BURNETT**
Group Presidents:
Publishing **JACK D. REHM**
Broadcasting **W. C. McREYNOLDS**
Real Estate **ALLEN L. SABBAG**
Senior Vice-President **JAMES CONLEY**
Vice Presidents
Corporate Relations **DONALD L. ARNOLD**
General Council and Assistant Secretary **THOMAS G. FISHER**
Product Development **NEIL KUEHNL**
Corporate Planning **HERB SCHULTE**
Finance **WILLIAM H. STRAW**
Administrative Services **GERALD D. THORNTON**
Secretary **BETTY CAMPBELL MADDEN**
Treasurer **MICHAEL A. SELL**

Better Homes and Gardens® WOOD — the magazine for home woodworkers (ISSN-0743-894X) is published bimonthly by Meredith Corporation, 1716 Locust Street, Des Moines, IA 50336. Application to mail at second-class postage rates is pending at Des Moines, IA. Trademark registered in Canada and Australia. Marca Registrada en Mexico. **SUBSCRIPTION PRICES:** One year $15 in the United States and its possessions. Canada and other countries add $6 per year. **POSTMASTER:** Send address changes to WOOD 1716 Locust Street, Des Moines, IA 50336. September/October 1984, Vol. 1, No. 1. **CUSTOMER SERVICE:** For service on your magazine subscriptions, including change of address, write to Customer Service Manager ROBERT AUSTIN, P.O. Box 10628, Des Moines, IA 50336. Please enclose a recent address label.

©COPYRIGHT MEREDITH CORPORATION 1984. ALL RIGHTS RESERVED. PRINTED IN U.S.A.

Are you getting squeezed out of your workshop?

Discover the space-saving advantages of the Shopsmith® MARK V. It "expands" the floor space of every shop it enters.

The MARK V combines the five major power tools — table saw, vertical drill press, horizontal boring machine, lathe and disc sander — in one economical, freestanding unit.

And the MARK V is the tool to start with... the system you grow with. Whether you're ready to tackle simple repairs or Chippendale classics, you'll find a full range of MARK V Accessories that can make any job easier.

The Shopsmith Difference
With Shopsmith you get a dedication to woodworking, education, expandability of your future needs, and buyer protection. Our philosophy is represented in the old-fashioned virtues of quality, value, pride and craftsmanship; virtues present in our educational training and products.

Your Special "Bonus"
Learn how the MARK V can help you do more projects more professionally. Send for your FREE MARK V Information Kit today! You'll see just how easy it is to make all those projects you've been dreaming about. Included in this kit is "How To Determine Your Best Power Tool Buy."

You'll also receive a FREE one-year subscription ($6.00 value) to HANDS ON, our Home Workshop Magazine packed with project ideas and helpful tips. You are under no obligation. So mail your card today!

Phone Toll Free: 1-800-228-2112
In Nebraska: 1-800-642-8788

Shopsmith Inc.
The Home Workshop Company
6640 Poe Avenue
Dayton, Ohio 45414-2591

Quality woodworking tools made in the U.S.A.

©Shopsmith, Inc., 1984
Shopsmith® is a registered trademark of Shopsmith, Inc.

Mail this valuable coupon today!

☐ **YES!** Please send me a Free MARK V Information Kit including the informative booklet "How To Determine Your Best Power Tool Buy". And enter my name for a FREE one-year subscription to HANDS ON magazine. I understand I am under no obligation.

Name _____
Address _____
City _____
State _____ Zip _____

☐ I currently own a Shopsmith woodworking power tool

Dept. 3684

Every Woodworking Project Starts With A Saw.

SPECIAL FEATURES ON ALL FREUD SAWS:

BODY PLATE: 42 to 44 Rockwell "C" scale. Heat treated.
EXPANSION SLOTS: Allows blade to expand without distorting.
ARBOR HOLES: Machined and ground to perfect tolerances.
MAX RUN OUT TOLERANCES: + - .003 .
MAX RPM'S: On a 10" diameter is 7000 .

The World's Best Carbide Tipped Sawblades Are On Sale Thru December 31, 1984!

Freud is pleased to offer all woodworkers the very finest in carbide tipped sawblades. In co-operation with all participating distributors, we are offering our 3 most popular carbide tipped saws on sale.

Combination Grind

LU84M
10" x 50 teeth 5/8" bore
Hook angle 7°
Carbide Used: C4
List 74.51 Sale 44.90

While this type of blade is a compromise of the other, blades, it will give you the results you expect in your shop. No one blade will do it all, however this is the one that comes closest. Most woodworkers we know have one of them. They are practical and inexpensive.

Alternate Top Bevel

LU85M
10" x 80 teeth 5/8" bore
Hook angle 7°
Carbide Used: C4
List 110.88 sale 73.90

This is the world's best production made carbide sawblade. You can be sure of one thing, that we are out to prove; You can spend as much as twice the price of our LU85M blade but you will not find a better one!! We guarantee it! The use of this blade should be limited to super fine finish work only. The primary and secondary bevels and the teflon coating make this unique sawblade so very precise that the cut seems effortless in all kind of materials. You can also do some occasional ripping in materials not over 3/4" thick, but the great number of teeth will slow you down.

Flat Top

LM72M
10" x 24 teeth 5/8" bore
Hook angle 20°
Carbide Used: C2
List 64.85 Sale 41.90

This blade is designed for fast ripping along the grain of the wood. Excellent finish is obtained when ripping. The advantage of using a C2 grade carbide is to allow us to use an aggressive 20° hook for fast ripping and yet go through occasional knots without fracturing the tips.

freud®

P.O. Box 7187, 218 Feld Ave.
High Point, N.C. 27264

Call Us Toll Free 1-800-334-4107
Outside N.C. (In N.C. 434-3171 Collect) For The Name Of Your Nearest Distributor.

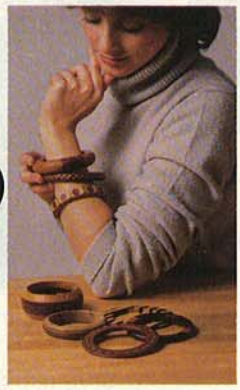
Better Homes and Gardens®
WOOD
THE MAGAZINE FOR HOME WOODWORKERS

CONTENTS

September/October 1984 Issue No. 1

70

62 56 78


74

Kit builder — oak dry sink 8
How to edge-join boards 37
Six classy cutting boards 44
Contemporary solid oak coffee table 50
WOOD tests 8 best-selling routers 53
Routers — what you should know before you buy . . 56
Project showcase — where readers show their stuff . 60
Collector's-edition marking gauge 62
Roll-around TV cart 64
The old hand ways 68
Craftsman closeup — Roger Sandstrom and his treenware 70
Designer bracelets 74
Oak — the world's No. 1 hardwood 77
The "sunshine express" kid's wagon 78
Paste stain and varnish — a tough finish that goes on easily 99

Books worth reading . . . 11, Tips from your shop (and ours) . . . 23, The lovable, little Stanley No. 1 bench plane . . . 76, Products that perform . . . 87, News and events . . . 95, Tell us about yourself (questionnaire) . . . 103

STRÖM TOYS
CLASSIC TOYS IN WOOD

Truly an heirloom! Plans include patterns for bridle, stirrups, cushion, and rocker painting. 51" long. 38" high. **Plan - $12.00**

PRANCER

STROM WAGON
All wood, full-sized wagon. You'll be pleased how well this handles. 38" long. 18" wide. **Plan - $7.50**

STEAM SHOVEL
PLAN - **$6.00**

DUMP TRUCK
PLAN - **$5.00**

STROM TOYS is a book of extraordinary wood toys you can make. Contains 11 mini-plans, 40 designs for which plans can be ordered, and a richly illustrated children's story. **Only $9.95 PPD.** (Wisconsin Res. add 5% Sales Tax.)

OTHER BOOKS AVAILABLE
GAZEBOS & OTHER GARDEN STRUCTURES • BRIDGES & CUPOLAS • PRIVY-CLASSIC OUTHOUSE BOOK - 25 designs
All Three Books - **$7.95 each PPD.**

NEW BOOK
BACKYARD STRUCTURES
Over 60 Designs in Full Color. 8 mini-plans in book. Contains: Storage, Cabanas, Dog Houses, Garbage Enclosures, Barns and More. **$8.95 PPD.**

SUN DESIGNS
P.O. Box 206, Dept. 34
Delafield, WI 53018
(414) 567-4255
MC & VISA ACCEPTED
(Wis. Res. Add.) 5% Sales Tax

A message to the readers of Wood Magazine from Las Vegas entrepreneurs, Richard Malott and Junior Sealy

WE HIT THE JACKPOT IN LAS VEGAS

WHEN WE BOUGHT THE AUSTIN HARDWOODS FRANCHISE

Facts

- Started August, 1980 in the depths of the recession
- Began showing profit after four months
- Sales first year $370,000
- Sales second year $725,000
- Recovered entire initial $90,000 investment in 20 months
- Doubled our warehouse capacity July, 1983 from 6,000 to 12,000 square feet
- Sales this year $1,000,000 plus!

Opinions

We couldn't have done it without the flexibility and expertise provided by the Austin Hardwoods program. The parent company has worked hand-in-hand with us, keeping us abreast of changing market conditions, new products, and effective marketing techniques. Their program allows the franchise owners to tailor their operation towards any ratio of retail/wholesale and hobbyist/commercial sales, and to grow as fast as they are able. Sure there was a lot of hard work, but the record speaks for itself. Our Austin Hardwoods franchise turned out to be a sure bet.

Details are too numerous to list. This is a tremendous opportunity to make money either as an owner/operator or as an investor. If you happen to love dealing in fine woods, all the better. Current total investment is approximately $90,000. Please let us hear from you.

Franchise Marketing Department
Austin Hardwoods P.O. Box 3096 • Austin, Tx. 78764

Visit the Austin Hardwoods Dealer nearest you.

DALLAS, TX. 75229
11353 Mathis
Myles Lasner
(214) 241-4777

DENVER, COLO. 80223
2625 S. Santa Fe Dr.
Russ Brown
(303) 733-1292

AUSTIN, TX. 78764
2119 Goodrich—P.O. Box 3096
Paul Fagan
(512) 442-4001

SAN ANTONIO, TX. 78217
10841 Hillpoint
Oren Dreeben
(512) 657-9994

EL PASO, TX. 79915
904 Tony Lama
Mike Loewenstein
(915) 593-0126

HOUSTON, TX. 77014
1300 Stuebner-Airline #408
Bill Bryant
(713) 440-0764

LAS VEGAS, NEV. 89109
2901 S. Highland #15A
Richard Malott
(702) 733-6677

KIRKLAND, WASH. 98033
11844 NE 112th St.
Bill Thurmond
(206) 823-2515

LORTON, VA. 22079
8930 Telegraph Rd.
Hinds Wilson
(703) 550-7076

ANCHORAGE, AK.
Opening Soon
Call Directory Assistance
For Information

SANTA ANA, CAL. 92703
2330 Fifth St.
Joe Brown
(714) 667-0704

PHILADELPHIA, PA. 19144
923 Hunting Park Ave.
Ted Missiras
(215) 848-9663

TACOMA, WASH. 98499
3622 96th S.W.
(206) 582-5484

TUCSON, ARIZ. 85705
2045 N. Forbes Blvd. #102A
Ted Hill
(602) 622-7383

PHOENIX, ARIZ. 85040
3821 E. Broadway
(602) 243-7191

The Editor's Angle

Welcome to Issue 1 of *WOOD—the magazine for home woodworkers.* I'm glad to have you with us, and I hope you find our initial effort to your liking.

As a home woodworker, you know the satisfaction you can derive from creating things with wood in your shop. What you may not know is that you're involved in a hobby that is quietly sweeping this country. Woodworkers are literally everywhere, and they're producing a lot of surprisingly good-quality work. We are all part of a renaissance of interest in quality, in things made by hand, and in the self-satisfaction that can come from doing things yourself.

The goal of all of us at *WOOD* is to heighten your enjoyment of and increase your abilities in this fascinating hobby. We'll do this by providing you with lots of well-designed, useful projects and shop-tested woodworking techniques . . . all presented step-by-step . . . and a host of other material designed to enlighten, inform, and entertain.

I'm serious about being of service to you. That's why I've assembled a staff of practicing woodworkers, equipped an on-location shop where we can practice what we preach, made arrangements with a group of nationally respected subject area specialists to help us, and asked the network of *Better Home and Gardens®* editorial scouts to scour America for well-designed projects, interesting woodworking personalities, and for anything else of interest to woodworkers. In addition, the staff and I plan to spend as much time as possible with woodworkers in all areas of the country to find out what they're up to.

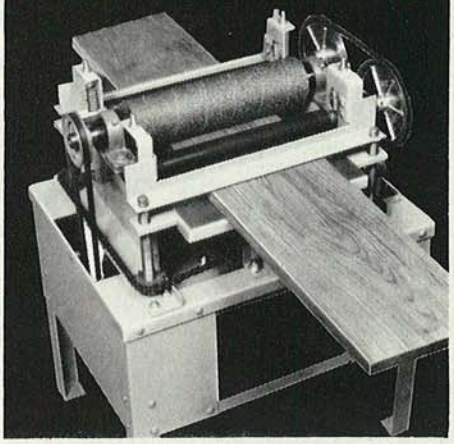
I do need your help, though. For *WOOD* to live up to its full potential, it has to be *your* magazine as well as ours. If you would, I'd like you to fill out the questionnaire on pages 103-104 so that I can more clearly determine your woodworking wants and needs. Also, I'd like to ask you to share with us and the rest of our readers your favorite shop tips, slides of some of your woodworking efforts, humorous experiences you've had while woodworking, and suggestions for articles you'd like us to present in *WOOD*. Naturally, if we publish your tips, slides of your handiwork, or use your humorous anecdotes, we'll acknowledge you in print and pay you for your effort. See pages 23 and 61 for how to submit tips and slides.

Once again, welcome to *WOOD*! Here's to a long and satisfying woodworking relationship between us.

Print this article

Larry Clayton

NEW Power-Feed DRUM SANDER!



At last! A complete power-feed Drum Sander at an affordable price! Comes ready to use including hood, stand and motor!

A FINISH SANDER . . . A THICKNESS SANDER

You can use this high tolerance machine for light dimensioning as well as the finest finish work. Because stock is power-fed at a uniform rate, you'll achieve results impossible to duplicate with hand methods or hand-held sanders. Dimensions remain exact — no more low spots, waves or cross grain marks!

IMPROVES RESULTS!

Use the Woodmaster to dimension and finish-sand cabinet pieces, resawn stock, paneling, grandfather clocks, toys, tabletops, knees, burls, crotches, and much, much more! You'll soon find it's one of the most valuable tools in your shop!

30-DAY FREE TRIAL!

Send for complete facts on how you can try the Woodmaster Power-Feed Drum Sander in your own shop for 30 days completely without risk! We'll also send you complete details on how you are fully protected by Woodmaster's One Full Year Limited Warranty. Easy Terms.

FREE INFORMATION KIT

Woodmaster Tools
2849 Terrace
Dept. RW2
Kansas City, Missouri 64108

Call Toll-Free 1(800) 824-7888 Oper. 642

Woodmaster Tools
2849 Terrace
Dept. RW2
Kansas City, Missouri 64108

☐ **YES!** Please rush my FREE Information Kit and details on your 30-Day Free Trial Guarantee.

Name _____

Address _____

City _____ State _____ Zip _____

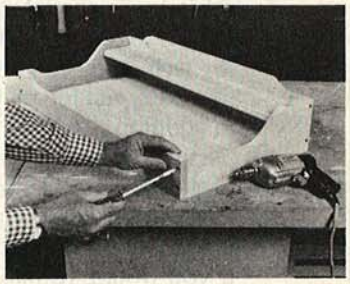
oak dry sink

Print this article

In this series of articles featuring a random selection of kits from various manufacturers, we will present our opinion of the kit based on our experience in having assembled it in our shop. In each case we also will evaluate the product on the following: quality of assembly instructions, quality of materials furnished in the kit, and how well the parts are machined.

Anyone who has ever assembled anything knows the importance of easy-to-understand assembly instructions. (Sometimes, it seems like the maker of the product is out to get you.) The folks at Craftsman's Corner obviously recognize this because they provide a set of clear, concise instructions that walk you through the project one subassembly at a time. We also appreciate the fact that they stamp each of the parts of the kit with a number. This helps immensely when it comes time to match the parts to those that are shown in the illustrations. The instructions don't, however, include an exploded-view sketch or cutaway drawing of the dry sink, which we think would prove quite useful to the customer who wants to see how all of the kit's parts fit together. Before assembly, we carefully inspected all of the kit's parts and found them to be of uniform good quality. The edge-joined pieces were well-machined and flawlessly glued, and we didn't detect any members that were warped or bowed. In addition, the parts were free of major defects such as loose-fitting knots, checks, and splits.

While not perfectly machined in every instance, most of the pieces fit together surprisingly well. We did have to sand and scrape a few of the joints to get them to fit together correctly, but this is almost universally true of kit products. Anticipating this, the manufacturer provided several sheets of sandpaper. We also encountered a couple of minor predrilled hole alignment problems, but nothing serious enough to require drilling new holes.



We feel that most people would find this kit easy to assemble, and be satisfied with the results. Our finished piece looked just as nice as the one pictured above. In addition to a few common hand tools and woodworker's glue, the person assembling the kit should have at least two bar or pipe clamps to ensure a good bond when gluing the pieces together. Be prepared to spend more time with the project than you might expect at first because of the time that is needed to glue and clamp the subassemblies together.

The oak dry sink kit is available from Craftsman's Corner, Inc., Woodcraft Collection, 4012 NE. 14th St., Box AP, Dept. BH, Des Moines, IA 50302. Telephone number: (515) 265-3239. Cost of the kit: $198.95 plus $21.00 postage and handling. A free illustrated catalog is available on request.

For unsurpassed accuracy, pick up the heavy duty saw that isn't heavy.

The Skilsaw® 551 circular saw.

Built to last.
The industrial grade ball bearing construction will last and last and last.

Less to lug.
It weighs just 6½ pounds. So it's easier to handle and harder to put down.

Precision balanced.
The 551 is precision balanced for greater comfort, control, and accuracy.

Accurate depth scale.
It has a steel depth-of-cut scale that's easy to adjust and accurate to use. No other saw in its class does.

Biggest little blade.
The 551 is the only heavy duty circular saw with a 5½ inch blade. That means, you can cut 2x boards in a snap.

See where you're going.
The 551 has a left-sided blade. So you can see your line-of-cut more clearly.

Keeps you in line.
The adjustable line-of-cut guide, a 551 exclusive, keeps your saw blade cutting on the line, everytime.

No heavy duty price.
The 551 is the lowest priced heavy duty saw in its class.

SKIL® We build tools that last and last and last.

EMERSON

SKIL CORPORATION
SUBSIDIARY OF EMERSON ELECTRIC CO
4801 WEST PETERSON AVENUE
CHICAGO, IL 60646

The World's Most Expensive Scroll Saw?

- Easy to use
- Precise
- Reliable
- Profitable

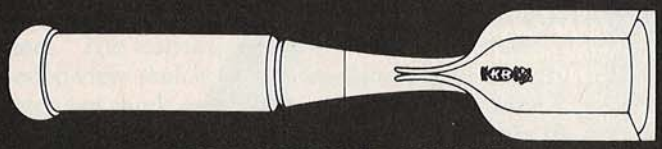
HEGNER scroll saws let you make toys, names, puzzles and gifts like no other tool.

And now **HEGNER** gives you the widest choice of models, from the new Multimax-1® at a breakthrough low price, to the Polymax-3®, the world's most expensive scroll saw.

Write for your free brochure today!

AMI, Ltd.
P.O. Box 312, Dept. 10
New Castle, Delaware, 19720
302-322-2226

AMI LTD
Advanced Machinery Imports



THE WORLD'S FINEST CHISEL

This Oiichi Brand chisel will take a sharper edge and hold it longer than any other chisel in the world. It can be driven with a 20 oz. hammer or hand guided in the most delicate of cuts. Backed by 1000 years of tool making tradition, the Oiichi family prides itself on making only the best. For the only complete catalog of Japanese woodworking tools reflecting this same pride and age old tradition send $1.50 to:

Woodline The Japan Woodworker
Dept. WJ • 1731 Clement Avenue • Alameda, CA 94501 • Phone: 415 521-1810

Print this article

SOUND ADVICE

tool safety tips

Practicing tool safety regularly is one of the first habits to develop in the home workshop. Use common sense, and the guidelines below, to add to the many hours of woodworking enjoyment ahead of you in the shop.

- Always unplug a power tool before servicing or adjustment. Let moving parts come to a standstill.
- Never wear loose-fitting clothes or dangling jewelry when using power or hand tools.
- Check the condition of a tool before you use it. Inspect power cords for cracks or frays, cutting edges for sharpness, and handles for stability.
- Don't tamper with or remove safety mechanisms from power tools — they're there for your protection.
- Use the proper tool for a job. Read and understand all instruction manuals that apply to a tool before you use it. Find out what it was meant to do as well as what it can't do.
- If there is even a remote possibility of eye injury in a particular situation, don't hesitate to wear safety goggles.
- Keep onlookers, especially children, a safe distance away while you're working with tools. Always instruct others in the proper use of a tool before letting them use it.
- Work in good light. Use bulbs of sufficient wattage and have extra clamp-on lights available as needed.
- Never work with tools when you're in a hurry, tired, or in a bad mood.
- Put tools away after use, preferably in a locked cabinet.

A Guide to American Wooden Planes and Their Makers

by Emil and Martyl Pollack.
The Astragal Press,
One South St.,
Morristown, NJ
07960. 1983.

335 pages.
$15

Whether you are a serious collector of wooden planes or just want to learn a little more about these intriguing American artifacts, you'll find this book helpful and quite interesting. The authors begin with a brief history of American plane making, then go on to discuss in detail the different types of wooden planes that were commonly made and how each was used. Diagrams, along with dozens of profiles of the most common molding planes, help amplify the points being made.

Next, the Pollacks offer a chapter on the value of American wooden planes. Using criteria such as the type of plane, the material it's made from, regional preferences, charisma of the maker, and condition of the tool, they give the reader a feel for the worth of what he has, or what he might expect to pay for something he wants.

By far, the majority of the book, however, is devoted to the identification of the American wooden plane. To the delight of collectors, the Pollacks have put together a directory of over 700 rubbings of makers' imprints, with the known information on each maker. And for those who want to delve more deeply into the subject, the authors provide a bibliography for further reading and an intensive reference listing of clubs and organizations across the nation that have an interest in tools and collecting.

Print this article

"It is still possible to buy good, ordinary planes for as little as $10. But rare 18th century planes, as well as choice 19th century ones, frequently sell for $500 and more and it's seldom that an 18th century plane by a known maker will sell for less than $100."

Build What You Need! Restore, Refinish What You Own! Do It Yourself and *SAVE!*

New Catalog Has Everything

See page after page of hard-to-find products plus plans and instructions.

Cabinet and furniture woods. Mahogany, walnut, cherry, maple, oak, teak, rosewood, padauk, etc. Kiln-dried, ⅛" to several inches some kinds.

Veneers. Colorful, richly grained. 79 kinds, 3-ft. lengths. 19 flexible veneers to 36" wide, 8 ft. long (cover beatup surfaces and unpainted furniture) 11 fancy burls & crotches, 16 exotic veneers, 7-ft. long.

IF YOU are at all handy with tools—or willing to learn in easy steps—here's the modern-day way to SAVE considerable sums of money. Build what you need. Restore and refinish what you own. Save on every project.

Everything you need—fine woods, veneers, specialty tools, wood finishes and how-to guidance—can be ordered by mail from Constantine. Read this partial list .

hardwoods veneers hardware shop equipment inlays wood finishes moldings how-to-books specialty hand tools cane and so much more.

Carving blocks, 54 sizes & kinds. 118 carving tools & chisels. 32 upholstery tools & essentials. 39 clamps. 13 turning squares 1" to 4" sq.

76 assembled inlay designs. Birds, floral, scrolls, animals, chess & card pips, butterfly, Madonna, sunburst, Zodiac, eagle, professional, fraternal.

Wood finishes. Period & modern hardware. Latches, locks, hinges, pulls, escutcheons. Music instrument woods. Small box hardware. 72 lamp parts.

96 how-to books: cabinetmaking, furniture, crafts, carpentry, shop techniques.

Wood picture kits. 73 appealing subjects. Some pre-cut, ready to assemble. Others are marquetry kits for you to cut and assemble.

Picture molding. Prefinished. 33 beautiful styles.

500 plans: furniture, cabinets, shelves, toys, desks, workbenches, period reproductions, cradle, clocks, home bars, Boston rocker, beds, etc.

Old-time icebox restorat
pop up kitchen shelf hardw
18" hole cutter attachme
maple plywood, 8 sizes. ¼"
Balsa wood, 19 sizes.
Cane, fiber rush, round re

Hard-to find. Tea wagon wheels, platform rocker hdwe. Wood bowl seal, coffee mill & pepper mill mechanisms, sliding hdwe. Revolving hdwe. Clock parts. Serving tray molding needs no handles. Music movements.

Specialty tools. Framing clamps, wood-threading tools, doweling jig, miter boxes, dovetail saw, bench holdfast, deep-throat fret saw, wood-burning tool, angle-cutting jig, circle cutter, inshave, veneer saw, pantograph, bow saw, mat cutter, miter trimmer.

Pipe briar block for carving. Carvers hardwood mallet. Turned, carved & square-taper furniture legs.

33 designs plastic painting stencils. Wood tea wagon wheels plus all hardware to make cart.

11 furniture casters, glides, levelers. Power sander. 14 specialty cutting tools from Japan. Dovetail jig. Laminate edge trimmer. 8 special-purpose planes. Dozens of drill bits, router bits. Drill speed reducer. Solid brass numerals, 4".

Cabinet lumber ¼ to ¾ thick. Cherry, oak, mahogany, maple, poplar. Up to 6 ft. long.

wer tools. 4" table saw. saw, 15" throat. er saw, heavy-duty route ⅜ variable speed

woodworker CATALOG

116 Pages

Order $1 Catalog NOW
$2 Refunded
Double Your Money Back!
$2 Refunded on 1st Catalog order

CONSTANTINE

CONSTANTINE Est. 1812
2054 Eastchester Road, Bronx, N.Y. 10461

★ **Send Woodworker Catalog. $1 enclosed**

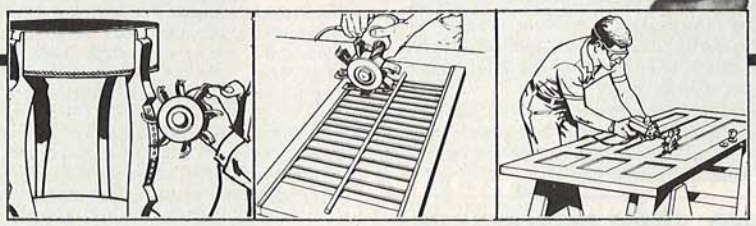
Double Your Money Back!
$2 Refunded on 1st Catalog Order

Get $2 BACK

Name .....
Address .....
City..... State..... Zip.....

ALL NEW LIGHTWEIGHT SAND-O-FLEX®

POWER SANDS CURVES WITH GREATER EASE!



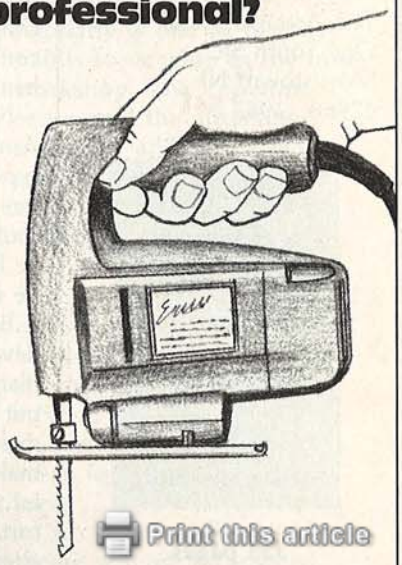
The professional way to sand paint, moldings, furniture, carvings is now made easier. New lighter weight Sand-O-Flex weighs only 9.5 oz. Designed for power drills it's perfectly balanced, easier to handle. Revolving brushes cushion slashed abrasive over curves and detail, without gouging. Wheel has hi-impact-resistant plastic body and yards of longer lasting, industrial cloth abrasive 1" wide. Turning cover feeds out new abrasive as needed.

ORDER BY MAIL 6½" overall dia. brush tip to brush tip. 8-brush wheel and coil of abrasive only $15.95. Extra 2.44 yard Abrasive Refills $4.50 ea. in Coarse, Medium or Fine. Add $1.50 postage and handling. **$15.95**

MERIT ABRASIVE PRODUCTS, INC.
201 W. Manville, Dept. BHGW, Compton, CA 90224

POWER TOOLS

what's the difference between consumer and professional?



Print this article

Most people know that tool manufacturers produce more than one line of a product for varying consumer needs. What they may not realize is how these tools differ in their manufacture, and what it is that makes one drill, for example, cost $25 and another "similar" one cost $125. We explain some of the points of difference here.

Design. The professional power tool is designed to be more powerful, last longer, and perform better under continuous-use conditions than consumer models. For occasional, around-the-house situations, you may prefer a less-expensive consumer tool.

Electrical cords. On most consumer tools, the electrical cord is 6 feet long or less. With the professional models, 8- and often 10-foot cords are the norm. With this length of cord, a worker doesn't have to use an extension cord in most situations.

Cord materials vary, too.

Continued →

Total Shop . . . the name for quality.

You've heard of the Shopsmith® woodworking machine — now take a look at Total Shop — the improved woodworking machine.

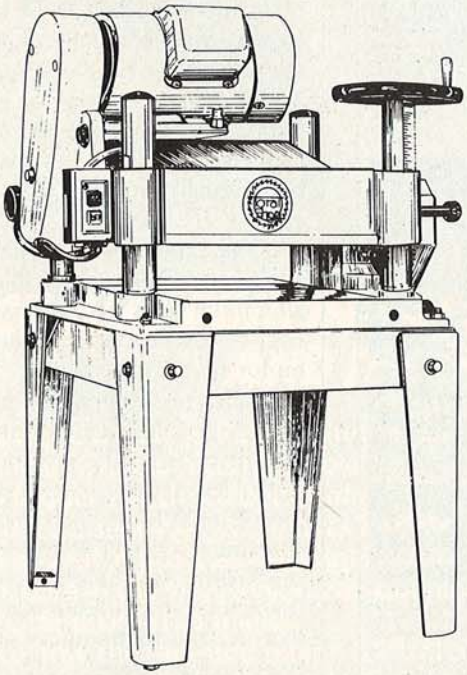
For Example:

1. **1½hp motor develops nearly 3hp while Shopsmith® motor is 1⅛hp developing 2hp.**
2. **Motor can be altered by owner to 220V. Shopsmith® does not have this option.**
3. **Though a larger and more powerful motor, Total Shop runs quieter than the Shopsmith® machine.**

Let us send you 11 more reasons Total Shop is a better buy.

CALL TODAY
toll free
1-800-845-9356
in S.C. call
288-4174

Attention Shopsmith® Owners: Call today for our accessory brochure and save money.



Introducing:

Total Shop TS 15-6 Planer

- 110 V or 220 V
- Stand & dust collector available
- 2 HP motor
- 15″ width, 6″ thickness

Total Shop®

P. O. Box 16297/Greenville, SC 29606

clip and mail coupon for: Free Informational Kit

Total Shop®
Dept. Q
P.O. Box 16297
Greenville, SC 29606

Your Name _____

Address _____

City _____ State _____ Zip _____

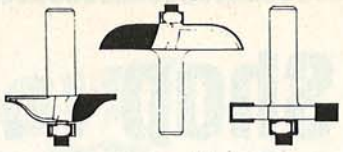
Phone _____

☐ Multipurpose tool ☐ TS 15-6 Planer

Training Schools available

©United Metal Services, Inc.

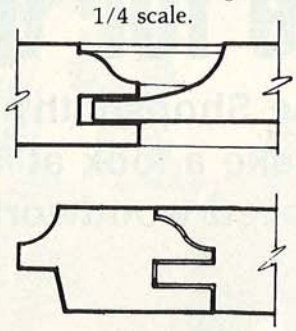
CONOVER
WOODCRAFT SPECIALTIES, INC.
18125 Madison Road, Parkman, Ohio 44080
(216) 548-3481



Note: All drawings 1/4 scale.

CARBIDE CABINET ROUTER BIT SET

This clever set of router bits produces beautiful panel and frame doors with the use of a router and router table. They are designed for the small cabinet shop as an economical alternative to a shaper. The basic set consists of two bits which makes the rails and stiles and one which raises the panel. If you are thinking about building a new kitchen this is an excellent method of making the new cabinet doors. Set includes three carbide cutters with 1/4" shank.



C899 Carbide Cabinet Router Bit Set **$94.95 ppd**

Dear Conover,

Please send me _____ sets of Conover Cabinet Router Bit Set @ $94.95 each post paid. I enclose a check ____ M.O. ____ for $_____.

☐ $1.00 Just send 48 page Unique Tool Catalog.

Please charge to my MC _____ Visa _____

_____ Exp. Date _____

Ship to: Name _____

Address _____

City _____ State _____ Zip _____

GIANT SCREEN TV

BUILD YOUR OWN—
using our
DUAL 8" LENS—
f1.7 rating:
330 mm focal length
$104.95 value
NOW only
$59.95
plus $3 shp.

FREE BONUS
Design plans for cabinet—a $15 value—included Free with DUAL LENS

Money back guarantee
ORDER NOW!!

Enjoy a larger-than-life quality picture using your 12" to 15" TV.

Easy to build—Construct this 5-foot BigSCREEN Cabinet model with less than $100 worth of particle board, screws, nails, hinges, etc. Finish with laminate, paint, stain, or antique as you wish.

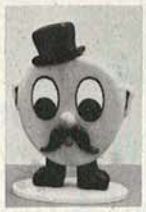
The f(1.7), 330mm focal length, 8-inch diameter lens system projects an edge-to-edge, magnificent picture.

For a few hundred dollars you can own a complete system that would cost $2000 or more.

R.E. MYERS, INC. TV Projector Div.
4940 73rd Avenue, No., Dept. W-89
Pinellas Park, FL 33565
1-800-334-0854 Ext. 857

Full Size Plans

This Roll Top Desk is one of our finest furniture plans. It is similar to those of the 1800's and is made of oak lumber. Size: 55" x 21" x 49"H. Plans include base and roll-top unit. You do not have to purchase two separate plans.
Desk - 311 $14.50



Mr. Goodbank is a thrifty fellow who just loves to save coins. This cute guy is actually a bank and is 10½" tall.
Bank Plan - 329 $3.00. Plan with eyes and nose $4.50

Our Rocking Horse features a soft saddle and flowing mane. Easily made of pine with basic tools. 36" x 25". Kit available containing foam, mane, eyes, rings, etc.
Horse Plan - 245 $7.00 Accessory Kit - HAK $9.00

This collection of five toy vehicles will make any child happy. Made of pine they are easily built with hand or power tools. The trailer truck is 18" long and 7" tall.
5 Toy Vehicles - PLD $8.50

This great Name Train spells out your childs name in 3" tall letters. Complete full-size alphabet included.
Name Train Plan - 323 ..... $3.50

Catalog $1.00 - Free with plans. Phone (516) 667-3328
We accept Visa & Master Charge orders if over $15.00

ARMOR Dept. L Box 290, Deer Park, NY 11729

SOUND ADVICE

Continued from page 12

POWER TOOLS

With tools designed for professionals, who may have to work outside, it's important for the cord to remain flexible during cold weather. To protect the tools, natural rubber or high-cost elastomer jackets are used. Less-costly cords are sheathed with polyvinyl-chloride (PVC) material.

In addition, on the pro tool the cord protector leading into the tool is separate from the cord to facilitate replacement. On the consumer tool, the protectors are molded onto the cord.

Switches. Dust and frequent usage are the enemies of tool switches. Since professional tools are subjected to more of both, switches need to be heavy-duty and protected from dust.

Motors. Professional-quality tools have motors designed to generate more power and sustain overloading for longer periods than consumer tools. At the same time they must be light enough for tradespeople to use for a long time. To guard against short-circuiting at high temperatures and speeds, manufacturers coat the windings of better-quality motors with epoxy.

More-expensive tools have copper windings rather than aluminum ones because, while copper costs more, it makes the motor more powerful.

Precise positioning of the carbon brushes, which transfer electricity from the electrical outlet to the motor, also sets professional tools apart from consumer tools. On the former, the brushes are held by close-tolerance brass holders rather than by the high-impact plastic ones on the latter.

Another difference is the type of bearings used. Gener-

Continued on page 94

RACK AND PINION PRECISION, INDEPENDENT SUSPENSION, AND IT CORNERS LIKE A DREAM.

Get behind a Black & Decker Plunge Cut Router. Take hold of those big comfortable handles with the built-in trigger switch for better maneuverability.

Feel the horsepower, as it makes fast, smooth corners as well as professional edges, joints and trim.

Then, take in the view as you work behind the wide shatterproof chip shield.

Notice how the rack and pinion controls make cuts as precise as 1/64th of an inch. The cutting is easy and accurate, because the plunge-cut feature gives the motor independent suspension. So the router base hugs the wood when you lower the bit.

And to change bits, just flip the router onto its flat top, for easy access to both the fingertip bit lock and the built-in wrench holder.

Get this or another Black & Decker router (except 7600) before June 30, 1985, and you can save on a whole package of optional equipment. Including a $7 rebate on our 11-piece set of router bits, and more.

So see the whole line of high-performance routers from Black & Decker. You'll want to drive one home today.

BUILT LIKE A BLACK & DECKER.

Take this giant $47.90 Capotosto WOODWORKING LIBRARY FOR JUST $3.95

PLUS DELIVERY AND HANDLING

as your welcome to Popular Science Book Club

More than **3000 ORIGINAL ILLUSTRATIONS, PLANS, SEQUENCE PHOTOS** show you every detail of project construction with hand and power tools . . . *plus* every woodworking technique you must know!

COMPLETE BOOK OF WOODWORKING WOODWORKING TECHNIQUES & PROJECTS

by Master Woodworker R. CAPOTOSTO

Whether you're a weekend woodworker or a pro in the business, your woodworking success and satisfaction *for projects big and small* are practically *guaranteed* with this superb how-to library!

Super-handy and unique, these excellent Capotosto books demonstrate all the basics and fine points you need to know *and* they introduce scores of *innovative woodworking tips and techniques* that save you time, materials, and dollars!

You'll gain confidence and learn new skills with these important books. They're loaded with *illustrated answers* on wood indentification, selection, handling . . . *pro tips* on wood joinery, sizing, measuring, cutting, matching, filling, finishing . . . valuable *time and money-saving how-to* on building, repairing, construction techniques—including dozens of *original woodworking project plans* you can build and finish yourself!

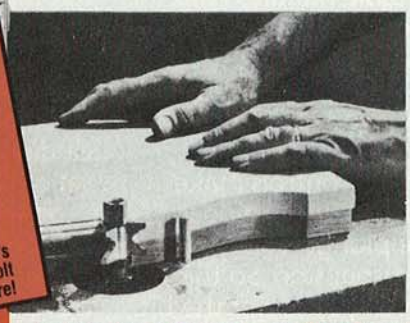
You get nearly 50 measured construction plans for tables, chairs, beds, cabinets, lamps, benches, a dry sink, mobile greenhouse, butcher block, tea cart, gateleg table, campaign desk, grandmother clock, rolltop desk, hutch, lounger, candlestand, full-function wall unit and much, much more!

Yes, this valuable $47.90 woodworking package—*custom-written exclusively for Popular Science Book Club*—offers you an enormous range of do-it-yourself ideas, know-how, and challenge. More than 3000 illustrations, photos, diagrams (created specifically for these books), show you exactly how to do each technique and project step by step. More than 840 pages of easy-to-follow text instruct you carefully and exactly. *Nothing is left out!*

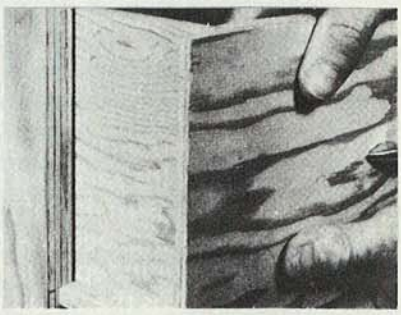
As a member of Popular Science Book Club, you get to choose the best from hundreds of *brand new,* hard-to-find do-it-yourself books on: Home Repair & Improvement, Home Workshops, Basic & Advanced Woodworking, House Building, Remodeling, Insulation, Wiring, Plumbing, Masonry, Electronics, Appliance Repair, Furniture Building, Energy Savers, Solar, and much more. *It's always your choice* and there are many bargains to choose from! To become eligible for these bargains, mail the card *today.* There's no risk!

FREE when you join

This handy Shop Guide measures in inches, centimeters. It's also a compass, protractor, drill and chisel grinding gauge, bolt and screw sizer, bolthead and penny nail measurer, and more!



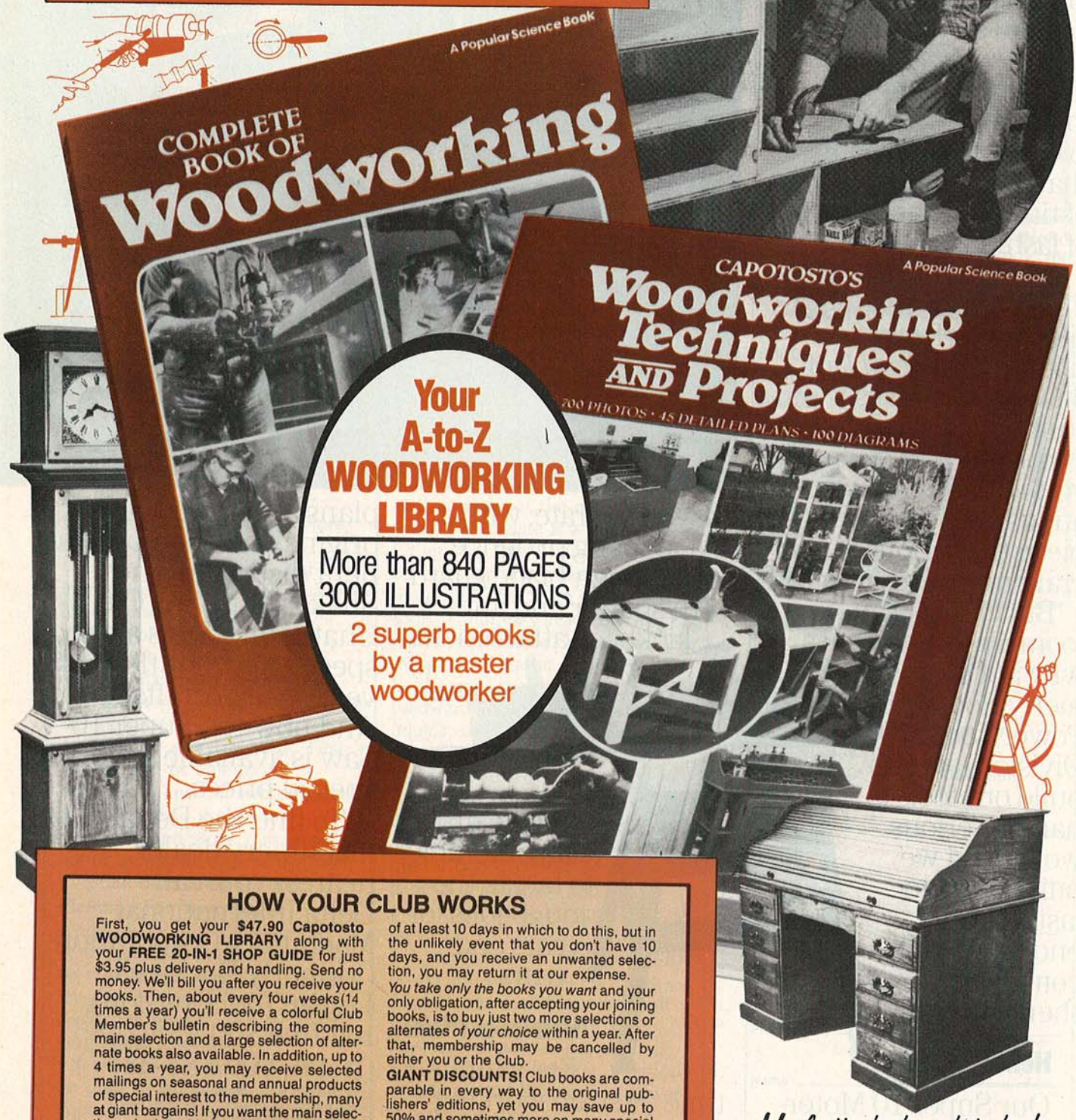
Working an entire edge with a pattern. The collar and pattern are in the lower position. The work is held to the pattern with several brads driven through the bottom of the pattern.



One of the simplest methods of drawer-and-guide construction which can be made with power tools. The drawer slides in slots dadoed intop the ¾" plywood cabinet sides. (American Plywood Assn.)

WORK WONDERS WITH WOOD!

It's easy with master woodworker Rosario CAPOTOSTO as your step-by-step, start-to-finish guide! Mr. Capotosto is a skilled woodworker/craftsman and a prolific how-to writer/photographer who has contributed hundreds of articles to leading handyman publications. His superb step-by-step photos show you exactly how to create and build exciting new furniture projects *and* how to do basic and fine woodworking techniques with ease, accuracy, and an original professional touch, *even if you're a beginner!*



Your A-to-Z WOODWORKING LIBRARY

More than 840 PAGES
3000 ILLUSTRATIONS

2 superb books by a master woodworker

HOW YOUR CLUB WORKS

First, you get your **$47.90 Capotosto WOODWORKING LIBRARY** along with your **FREE 20-IN-1 SHOP GUIDE** for just $3.95 plus delivery and handling. Send no money. We'll bill you after you receive your books. Then, about every four weeks (14 times a year) you'll receive a colorful Club Member's bulletin describing the coming main selection and a large selection of alternate books also available. In addition, up to 4 times a year, you may receive selected mailings on seasonal and annual products of special interest to the membership, many at giant bargains! If you want the main selection only, do nothing. It will be sent automatically. If you don't want it or want an alternate book, or no books at all, simply indicate your wishes on the handy form that comes with the bulletin and return it to us by the date shown. (No envelope needed.) Club mailings are carefully scheduled to assure you of at least 10 days in which to do this, but in the unlikely event that you don't have 10 days, and you receive an unwanted selection, you may return it at our expense.

You take only the books you want and your only obligation, after accepting your joining books, is to buy just two more selections or alternates *of your choice* within a year. After that, membership may be cancelled by either you or the Club.

GIANT DISCOUNTS! Club books are comparable in every way to the original publishers' editions, yet you may save up to 50% and sometimes more on many special bargains offered throughout the year to the membership. To become eligible for these bargains, mail the attached postpaid card today! *What a great way to build a valuable handyman's library of first-rate books that can really save you time, effort, and dollars in the months ahead!*

Mail attached card today!

If card is missing, write to:

Popular Science Book Club

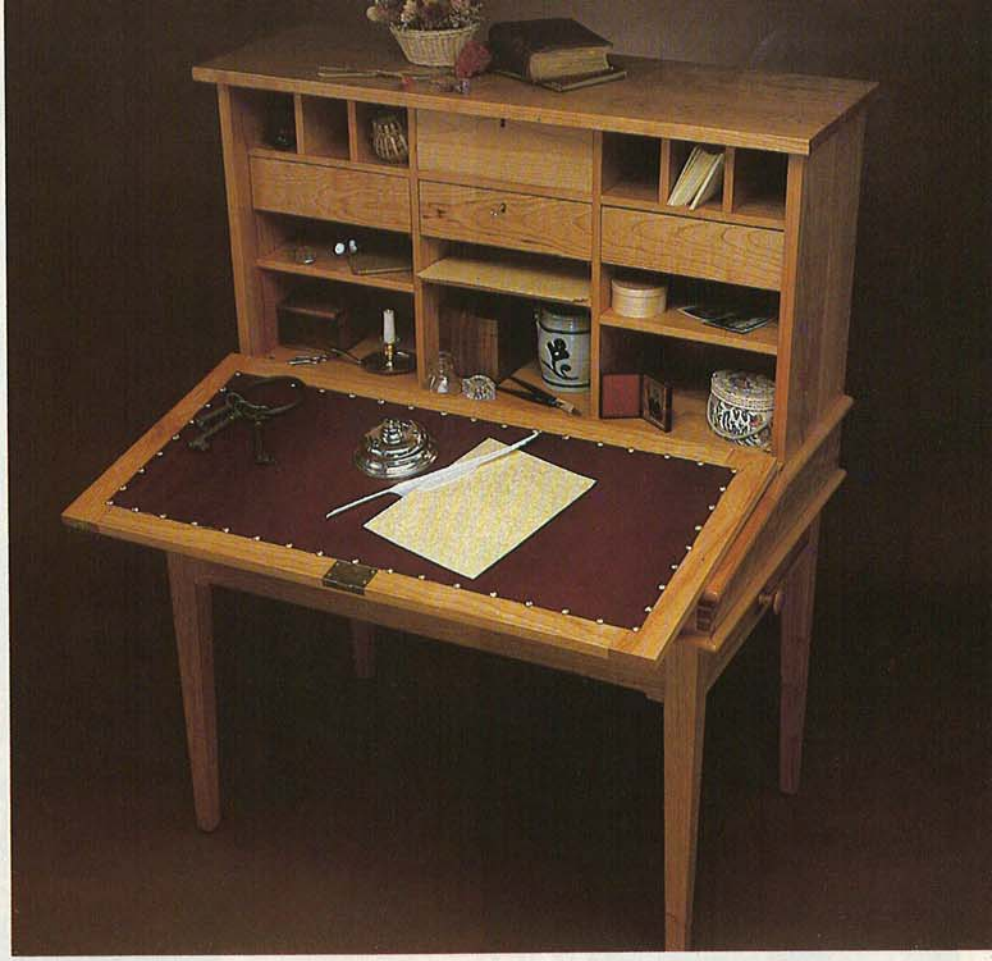
P.O. Box 2006, Latham, N.Y. 12111

Heirloom.

"Let it be plain and simple." With these words, Mother Ann Lee, founder of the Shakers, defined an attitude and a philosophy that has resulted in some of the most beautiful furniture ever created. Furniture that has survived the test of time and the whims of fashion.

Like this Shaker writing table. Decidedly simple. Perfectly functional. Its very *lack* of decoration makes it stunning. A piece you'd love to own. A piece you could keep for generations. The kind of piece the serious home craftsman loves to build.

But creating an heirloom isn't easy. That's why at Delta (formerly Rockwell Power Tool Division), we build our tools to handle serious work. And we build them to last long enough to become heirlooms themselves.



Heirloom Saw.

Our Super 10 Motorized Saw is a perfect example. We made it sturdy and durable, with cast-iron construction.

We made it safe and easy to operate: with a self-aligning rip fence, see-through blade guard with splitter and anti-kickback attachment.

And we made it capable; able to tackle the tough jobs for years and years.

Heirloom Plans.

For a limited time, ½ scale working plans for the Shaker writing table will be supplied with every purchase of our Super 10 Motorized Saw. The plans are based on the original table, on permanent display at The Shaker Museum, Old Chatham, NY. It's a very special offer for the very special craftsman. And now the Super 10 Saw is available at very special prices.

To find the Delta machinery dealer nearest you, call Delta International Machinery Corporation (formerly Rockwell Power Tool Division), toll-free 800-438-2486 (in PA, 800-438-2487).

Offer good only in the continental U.S., Alaska and Hawaii through December 31, 1984, or until supplies are exhausted.

Behind Our New Name Is Our Old Reputation.

DELTA

planning your home workshop

Having a specific place to do your woodworking makes sense. As with any other hobby, you'll need an area that's convenient, comfortable, well-organized, and with sufficient space for work and storage. Depending on your experience level, the number of tools you have, and the size of most of your projects, that space can be great or small, basic or elaborate, but you'll need a definite area for a workshop to call your own.

Finding The Space

Available space, and your needs, will dictate where to locate your shop. The most likely places are basements, garages, and seldom-used rooms, but even closets and attics can be candidates. A basement, though, has several distinct advantages over other areas. It's out of the normal family traffic pattern, so your work won't be disrupting. More often than not, it has lots of unused space that can be put to immediate service as well as allow for expansion. And, basements make a comfortable working atmosphere — cool in summer and reasonably warm in winter.

There are, however, two limiting factors in using a basement: accessability and dampness. First, you have to be able to get materials in and out without much difficulty. And if you can't control dampness by waterproofing or dehumidifying, you'll have to locate other shop space.

Planning For Your Needs

Once you've found the site for your shop, take some time to plan on how to best equip it. The following pointers can help you decide on what to include, space permitting, of course.

• Selecting the right workbench for your situation is an all-important step since it will be the center of your woodworking activity. Full-size workbenches typically measure 6′ to 8′ long and from 24″ to 36″ deep, with a height between 32″ and 42″. Because of space limitations, a bench in these sizes may not work for you. Or, standard heights may prove uncomfortable. So, obviously, you'll have to do some tailoring. A good rule of thumb to remember is that working height should be about even with your hipbone, but decide what will be best for you.

You can either buy or build a workbench that suits your needs. Ready-built ones, in kit form, are available from the simplest made of steel and particleboard to the most elaborate of joined oak or maple.

If you build your own, no matter what its finished size, use sturdy materials and strong fasteners that result in a durable, steady work surface.

• Storage for tools and liquids as well as many of the other supplies you'll accumulate is a must. Otherwise, they'll quickly clutter up the shop and make any project more difficult. Store small hand tools within easy reach on a rack made of perforated hardboard. Use inexpensive plastic organizers to hold screws, bolts, and other hardware. Flammable and toxic liquids, such as thinner, glue, and paints, as well as power tools, should be stored in locked cabinets or other safe places away from curious young ones.

• Plan for proper lighting. Have one or two overhead lights for general illumination and several more concentrated fixtures for task lighting.

• A minimum electrical supply for power tools and lighting is one 20-amp circuit with ground fault protection. Larger shops should have one circuit for power tools and another for lighting. Position outlets around the shop so power is never far away.

• An exhaust fan capable of changing shop air every four minutes provides adequate ventila-

Print this article

Continued on page 22

AT LAST...
WOODWORKERS
The Package You Have Waited for:

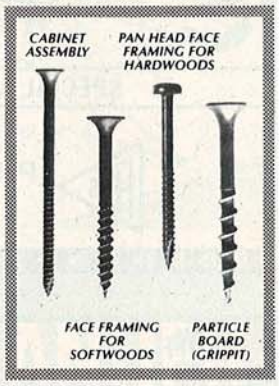
Handi-Pak by ESC

Specialized Screws for your Woodworking. **In packages of 50 - 100.** (Hinge Screws: 500)

CASE-HARDENED STEEL
won't snap in half.

RAZOR SHARP
Points penetrate easily. Phillips & Square Drive

STOCKED for **IMMEDIATE SHIPMENT.**



Satisfaction guaranteed or your money back.
($50.00 MINIMUM ORDER)

Please send
☐ SamplePak (3 screws for inspection)
☐ Fastener Guide/Price List

Company _____
Address _____
City _____
State/Zip _____
Phone ( ) _____
Name _____
Title _____

EQUALITY **SCREW CO. INC.**
P.O. Box 1645
El Cajon, CA 92022
(619) 562-6100
Toll Free 800-854-2886
In California 800-552-8844

PHILIPPS BROS./PORTER+CABLE

SANDING SPECIALS

SPEED-BLOC, #330

- Palm Grip, One Hand Use
- Flush Sanding All 4 Sides
- Direct Drive
- All Ball Bearing
- Double Insulated

LIST $85.50

SPECIAL $59.00 ppd.

H.D. FINISHING SANDER, #505

LIST $145.00

SPECIAL $99.00 ppd.

- Full Grip Top-side Handle
- Front Handle for Positive Control
- Fast, Less Fatigue

BELT SANDER, #360 (Illus.)

FEATURES OF ALL THREE BELT SANDERS

- Dustless • Ball & Needle Bearing Construction
- Perfect Balance

#360—3 x 24" LIST $269.00 SPECIAL $175.00

#362—4 x 24" LIST $284.00 SPECIAL $195.00

#337—3 x 21" LIST $174.00 SPECIAL $115.00

SPECIAL ABRASIVE PRICES! BELTS, SHEETS, DISCS

VISA MASTERCARD CHECK OR MONEY ORDER PPD Cont USA

PHILIPPS BROS. SUPPLY, INC.

Construction and Industrial Supplies

Est. 1927

3159 BAILEY AVE. • BUFFALO, NY 14215 • 716/834-8353

1/3 OFF

Smith's

Arkansas Stones

Bench Stones (All prices postpaid)

Soft	6x2x1	$12
	8x2x1	$17
Hard	6x2x1	$18
	8x2x1	$23
Black	4x2x1	$16
	6x2x1	$28

Combination Stones

Soft-Hard

6x2x½ $20

8x2x½ $25

Tyzack

"Nonpareil" Saws Solid Brass back Dovetail 8" x 20 tpi Reg. $34 SALE $30 ppd

10" x 15 tpi Reg. $36 SALE $32 ppd

12" x 15 tpi Reg. $38 SALE $33 ppd

Hand Saws

Buck Bros. 8 pc. Turning Set

Reg. $80 SALE $65 ppd.

Manny's Woodworker's Place

602 S. Broadway

Lexington, KY 40508

Call 606-255-5444 to place order. Visa, Mastercard, checks, COD ($2). Hours 10-5:30 Mon.-Sat. Ask for free sale brochure.

SALE on

freud

All prices include shipping

LM 72M-10" Rip, 24t Reg. $65 SALE $42 ppd

LU 85M-10" Crosscut, 80t Reg. $111, SALE $72

LU 73M-10" Crosscut, 60t Reg. $79, SALE $48

LU 84M-10" Combi., 50t Reg. $71, SALE $45

Shopsmith owners - Add $8 for 1¼" arbor hole

AD 800-8" Adjustable Dado Reg. $63, SALE $49

DS 306-6" Dado Set Reg. $140, SALE $98

DS 308-8" Dado Set Reg. $170, SALE $120

Freud Carbide Tipped Router Bits

Set of ¼, ⅜, ½" Str. double flute Reg. $38, SALE $28

Corner round, ball bearing, Set of 2 Reg. $57, SALE $37

Cove bit, ball bearing, 1⅛" cut. dia. Reg. $32, SALE $22

Dovetail bits, Set of 2, ⅜, & ½" Reg. $25, SALE $18

BOOKS ON SALE

All prices include shipping

Techniques 1 thru 5 Reg. $17, SALE $15 (All 5 - $72)

Tage Frid - Joinery or Shaping Reg. $18 ea. SALE $16 Both $30

Watts - Houseful of Furniture Reg. $19, SALE $16

Hoadley - Understanding Wood Reg. $20, SALE $18

Design III Reg. $14, SALE $12.50

Biennial Design Reg. $10, SALE $9 Des. II Reg. $12, SALE $10.50

Woodworking with Kids Reg. $19, SALE $16

New — Odate - Japanese Tools Reg. $23, SALE $20

Cary - Kitchen Cabinets Reg. $12 SALE $10.50

Dale Nish - Set of 2 woodturning books Reg. $29, SALE $25

James Krenov - Set of 4 books in paperback Reg. $54, SALE $45

Brink & Cotton Vise

7x3 jaw, opens 8", front dog Reg. $37 SALE $32 ppd

SOUND ADVICE

Continued from page 21

planning your home workshop

tion. Determine the size fan you need by figuring the cubic feet in your shop (length×width×height). You'll welcome this addition when gluing and finishing.

- Keep emergencies in mind. For warning against fire, you'll want to install a smoke detector. If one starts, have a good-size ABC-rated fire extinguisher handy. Battery-powered lights should be within reach in case of power failure. And a fully equipped first-aid kit will help you deal with injuries should they occur.
- Keeping the shop clean adds to safety and work efficiency. A broom and large dustpan are minimum. A shop vacuum is better. You'll also need a metal trash container with a tight-fitting lid to hold all the waste material you'll generate from project to project.
- A pair of sawhorses are a necessity for supporting bulky sheet goods and lengths of lumber while sawing or measuring. If space will be at a premium, consider buying the hinged, metal leg horses or the metal bracket type, both of which are easily disassembled for storage. You can build your own of scrap wood easily, and they'll be sturdier, but they will take up room.
- Lumber, hardwood, and sheet goods require storage, too. All wood should be kept off a concrete floor or it will take in moisture. Construct flat racks for your woods if you have the space. Otherwise, sheet goods can stand on edge, file card fashion, if propped so they won't bend or bow. Floor space may be limited, so look above for the possibility of overhead storage.

Once set up with the basics, you'll be able to work comfortably and efficiently, adding touches as you go along to complete your workshop.

TIPS FROM YOUR SHOP (AND OURS)

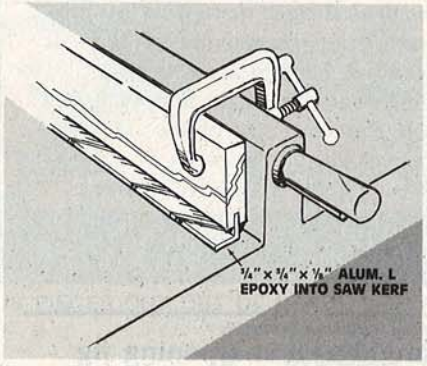
In woodworking, no one knows it all. But through experience, we all have run onto better, safer, faster, or easier ways to do things. When we come up with interesting tips or techniques, we'll show them to you in this column. And when you share your favorites, we'll pay you $25 for each submission we published. Send your tips to:

Shop Tips
Better Homes and Gardens®
WOOD Magazine
Locust at 17th
Des Moines, IA 50336

Print this article

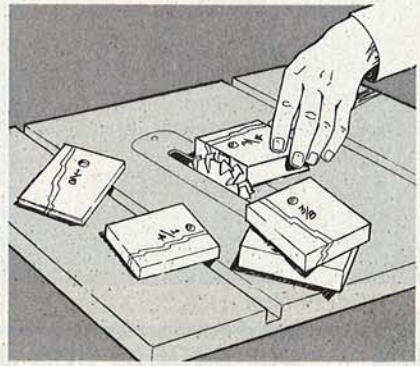
Thin stock rip guide

Plastic laminate and other thin stock has a tendency to slip under the rip fence of your table saw while you're making the cut. TIP: Build this easy-to-make barrier that clamps to the fence. Run a centered groove along the length of a piece of 1× material; the stock should be almost as long as your rip fence. Use epoxy to glue in a strip of ⅛×¾×¼-inch aluminum angle. Use C-clamps to hold the guide in place against the fence while sawing.



Handy blade-height gauges

Measuring the depth of cut for various wood thicknesses on a table saw involves a lot of adjusting and readjusting. TIP: Gather scraps of plywood or other stock in common thicknesses you normally use, then cut them into uniform squares. Label each for permanent reference. Keep them handy by drilling a hole in each and hanging on a peg, or string them up necklace-style. They're a real time-saver.



Continued on page 24

PLANER·MOLDER·JOINTER·SANDER

THE FIRST TRULY AFFORDABLE TOOL OF ITS KIND

READY-TO-USE

Comes complete with motor, switch, stand, knives, full instructions...ready to use. *Outperforms* other combination tools at over twice its low price. Easy terms.

30 Day FREE Trial

Send today for complete facts!
MAIL COUPON TODAY
OR
CALL TOLL-FREE
1(800) 824-7888 Ext. 642

Woodmaster Power Tools, Inc. Dept. PW2
2849 Terrace Kansas City, MO 64108

saves you money...

Put the versatile power tool to work in your own shop. See how fast it *pays for itself!* Quickly converts low-cost, rough lumber into valuable finished stock. Turns out perfect quarter-round casing, base mold, tongue & groove ... all popular patterns ... any custom design. Quickly converts to power feed drum sander! Commercial-size jointer produces super-true edges, squared stock, bevels, chamfers.

...makes you money!

Start your own high-profit business selling all types of trim and millwork to lumberyards, carpenters, contractors, do-it-yourselfers. Use it to make grandfather clocks, gun cabinets, paneling, flooring, furniture ... almost any home or farm building project.

WOODMASTER POWER TOOLS DEPT. PW2
2849 Terrace Kansas City, MO 64108

☐ **YES!** Please rush me, free and without obligation, your Complete Information Kit on the new PLANER/MOLDER/JOINTER plus facts on Woodmaster's 30-Day FREE TRIAL Money-Back Guarantee.

Name _____
Address _____
City _____ State _____ Zip _____

"Woods of the World"

Factory Lumber Outlet
200 SHREWSBURY STREET
BOYLSTON, MASSACHUSETTS 01505

We stock over 100 species of domestic & exotic woods including:

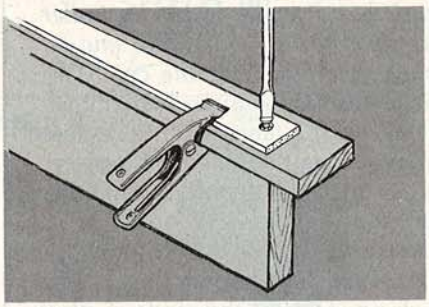
- All Domestic Woods
- Angelim
- Apple
- Balsa
- Benge
- Boxwood European and Brazilian
- Brazilian Rosewood
- Bubinga
- Ceylon and African Ebony
- Ceylon Satinwood
- Cocobolo
- Curly and Birds Eye Maple
- East Indian Rosewood
- English Brown Oak
- European Pearwood
- Goncalo Alves
- Holly
- Honduras Rosewood
- Jelutong
- Macassar Ebony
- Mahogany
- Mexican Rosewood (Bocote)
- Padouk
- Purple Heart
- Shedua

During more than a half century as millwrights and cabinetmakers, we have become experts in acquiring and working with the finest hardwoods and softwoods. Our knowledge of the best domestic and worldwide sources of rare woods is without peer. The large volumes in which we buy fine woods affords us the best possible prices which, in turn, we pass along to you. Iaccarino and Son is also your source for the finest lines of high quality woodworking hand tools.

Call For Free Catalog
(617) 869-2791
TOLL FREE:
In Mass. 1-800-521-0039
New England 1-800-222-1420

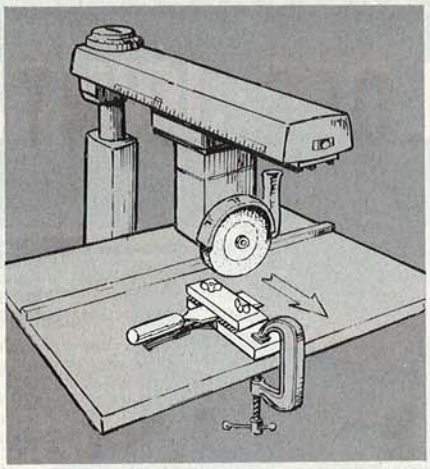
TIPS FROM YOUR SHOP (AND OURS)

Finish protector



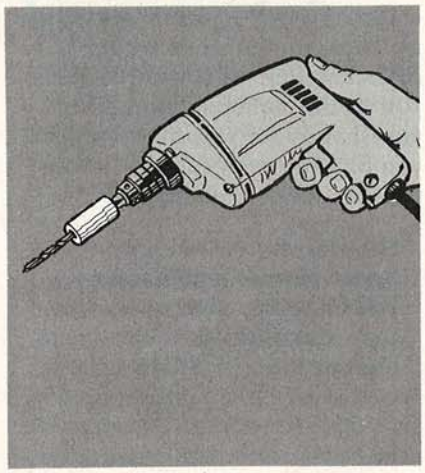
Ever have a finely sanded or finished surface disfigured by just one slip of a screwdriver? TIP: It need not happen again if you remember this trick. Simply drill a hole the exact size of the screwdriver you're using in a piece of thin stock (¼" plywood works well for this), then clamp it in place over each hole before you begin fastening.

Radial arm sharpening jig



Chisel and plane blades are tough to hone because they require a hollow or concave bevel that keeps edges sharp. Even if you use a grinder it's hard to be true. TIP: Build a jig, as shown, from plywood or other scrap and two bolts fitted with wing nuts. Fasten a grinding wheel to your radial arm saw, then adjust the position of the jig and the grinding wheel height to achieve the proper angle. Controlled passing of the radial arm does the rest.

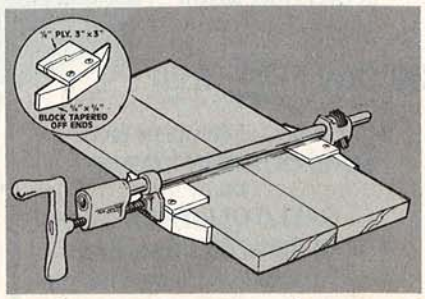
Depth-of-hole control



Without a drill press, accurate control of hole depth with a hand-held electric drill is difficult at best. TIP: Drill a hole in a short length of dowel that's large enough in diameter that it won't split and fits snug on the bit. To adjust for depth of hole, vary the dowel's length and the placement of the bit in the chuck. You can make several of these for a variety of depths to keep on hand, or toss it when finished.

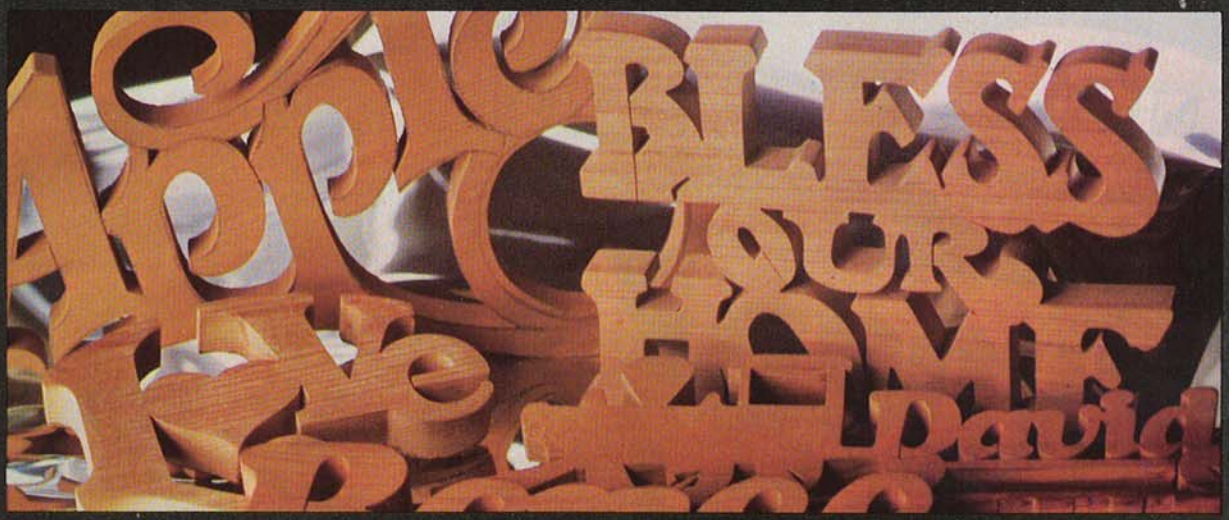
Stay-in-place clamp pads

When clamping glued-up stock, the pads you use between the clamp jaws and the stock fall out before you can tighten the clamps. TIP: Add top flanges to your pads as shown to form L-shaped devices that ride on top as well as against the material you're clamping. Make several, using hardboard or thin plywood glued and screwed to your normal pad material. Keep them handy for the times you use pipe or bar clamps.



Continued on page 27

RBI industries



PICTURED ARE VARIOUS PIECES CUT OUT OF HARDWOOD BY THE EAGLE SCROLL SAW

the Eagle...

ONE PIECE CAST ALUMINUM "C" ARM FOR SAFETY & BALANCE.

FULL 2 INCH CUTTING DEPTH. LARGE 16 INCH x 29 INCH ADJUSTABLE CAST TABLE 45° TO RIGHT/20° TO LEFT.

HAND SAW ACTION

MODEL 216

The Eagle features the pat. pend. "C" arm for maintenance free use year after year. The pivot point in the arm, and the pitman drive have sealed ball bearings. A large cast table allows tilt adjustment up to 45 degrees to the right and 20 degrees to the left. Full 16 inch throat.

FALCON MODEL 212

- Max. Cutting Depth 2"
- Stroke 5/8"
- Strokes/Min. 1725
- Motor 1/8 H.P. TEFC
- Drive: Direct

Made in the U.S.A. by Craftsmen

MODEL 408 AND MODEL 612 POWER-FEED WOODPLANERS

MAKES YOU MONEY BY SAVING YOU MONEY . . . this versatile power tool pay for itself by converting low-cost rough lumber into valuable finished stock. Turns out perfect quarter-round, casing, base mold, tongue & groove . . . all popular patterns . . . plus any custom designs

READY TO USE
TWO MODELS AND FOUR POWER-FEED-FUNCTIONS

PLANER • MOLDER • JOINTER • DRUM SANDER •

DEALER INQUIRIES INVITED

Woodplaner sold only thru dealers !

Falcon...

A QUALITY BUILT affordable precision Scroll Saw that will give professional results that are associated with expensive imported models. Twin cast parallel-arms with a simple tension adjustment allows a highly tensioned blade to make accurate cuts while enabling quick blade replacement.

CLIP AND SEND FOR MORE INFORMATION

rbi industries, inc.

Telephone: 816-987-2121

201 FIRST STREET
PLEASANT HILL, MO. 64080

NAME _____

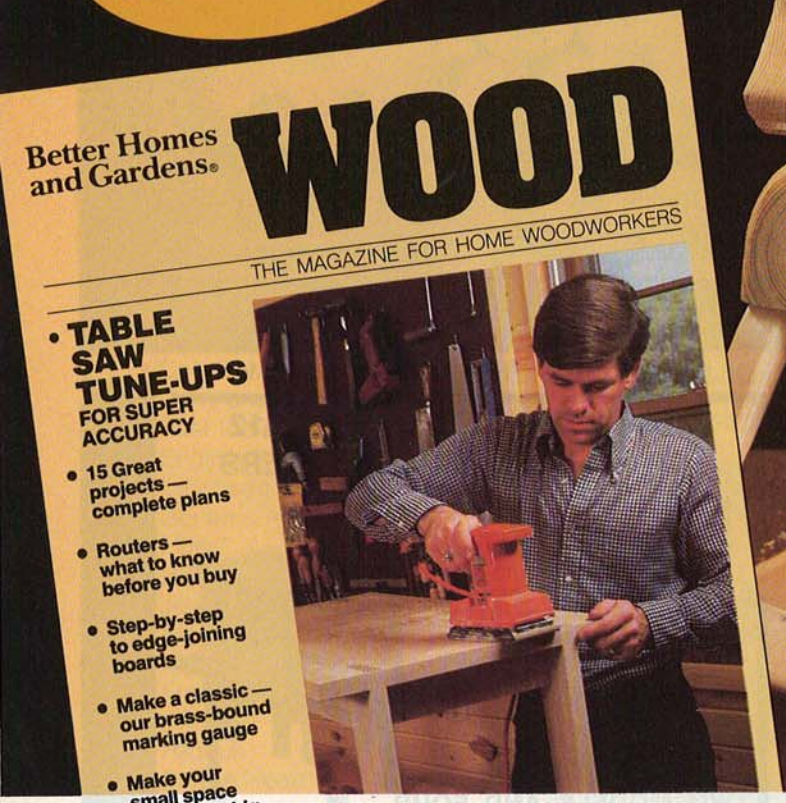
ADDRESS _____

CITY _____ STATE _____ ZIP _____

• Woodplaners • Scroll Saws •

Now, enjoy Better Homes and Gardens® WOOD magazine delivered to your home...

NEW
from the Publishers of
Better Homes and Gardens®



CHARTER OFFER
1 year $15
(6 issues)
Save $2.70
off single-issue rate!

Subscribe now at *Charter Savings* —

Whether you're a woodworking buff — or simply enjoy an occasional weekend project, WOOD is the perfect magazine for you. And now you can try it at special charter savings!

What's more, each issue is full of...

- **Projects for *every* skill level** — from one-nighter scrapwood projects to furniture and decks. And each is tested in our shop FIRST!
- **Step-by-step illustrations.** You'll get cutting lists...cutting diagrams... assembly instructions — to guide you from start to finish!
- **Advice about tools.** What's new on the market, what to look for when buying tools and how to best take care of them.
- **How-to techniques.** From making classic hand-cut dovetails to using new-fangled doweling jigs.
- **Shop tips.** Both from our workshop *and* from other readers.
- **Visits with master craftsmen.** Expert woodworkers all across America will share their ideas with you!

PLUS, good workshop set-ups for large and small spaces, how to choose the best wood for your projects and the latest in woodworking books and shows. And each article is written by experts! Our editors are experienced woodworkers themselves, so you'll get information you can really *trust*.

Order today! Just complete the attached Charter Subscriber Certificate and return it to us now — postage is paid.

MAIL TODAY.

Subscription prices are subject to change!

Better Homes and Gardens® WOOD • Locust at 17th • Des Moines, Iowa 50336

TIMBERS COUNTRY STORE

WOODWORKERS, GET ORGANIZED!

Introducing a NEW organizer unit especially for the woodworker. Nine large interlocking plastic bin boxes hold hundreds of the most needed wood parts.

This special woodworkers organizer unit comes complete with:

- 64 1" Toy Wheels
- 24 1¼" Toy Wheels
- 12 1½" Toy Wheels
- 100 Axle pegs for wheels
- 100 ¼ x 1½" Glue Pins
- 80 ⅜ x 2" Glue Pins
- 150 ¼" Maple Screw Hole Buttons
- 150 ⅜" Maple Screw Hole Buttons
- 100 ½" Maple Screw Hole Buttons
- 100 ⅜" Maple Round Head Plugs
- 100 ½" Maple Round Head Plugs
- 10 3½" Hardwood Shaker Pegs
- 9 Large Plastic Interlocking Bin Boxes in three colors.
- 3 Plastic Bin Box Dividers
- 9 Descriptive Labels for Bin Boxes
- * Assembled unit measures 5⅝ x 8½ x 12"

MORE THAN 1,000 PIECES IN ALL

Introductory offer: ALL FOR ONLY **$29.95** PPD*/Regular $55 retail value.
*California residents add 6% sales tax
Canadian orders, add $5 Shipping and Handling

ACT NOW, SAVE SHIPPING CHARGES, after 12/1/84, add $2.00 for shipping and handling.

For Bank Card Orders:
Call TOLL FREE
800-824-5897
(in California or Canada, phone 916-581-4141)

FREE CATALOG WITH ORDER:

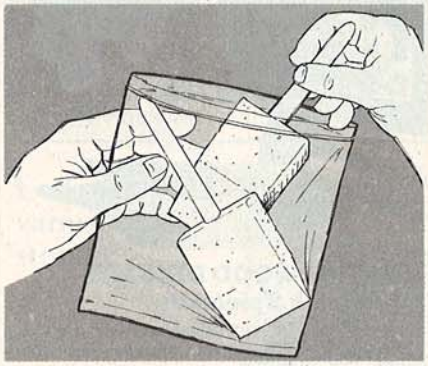
Catalog with hundreds of woodworking patterns and books, plus many hard to find specialty furniture and toy making parts and woodworking tools. The catalog is included free with your order, or is $1 alone.

TIMBERS COUNTRY STORE
Woodworkers Catalog, Dept. BH9
Lake Forest Rd.
Carnelian Bay, CA 95711-0850

TIPS FROM YOUR SHOP (AND OURS)

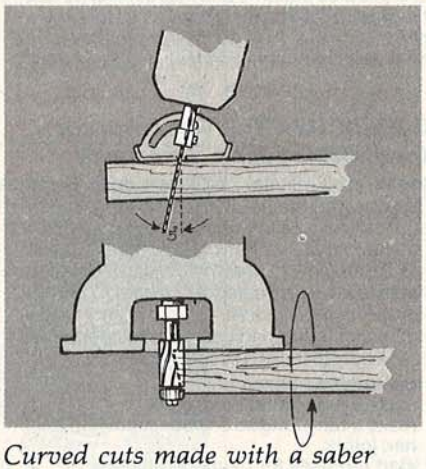
Continued from page 24

Airtight storage



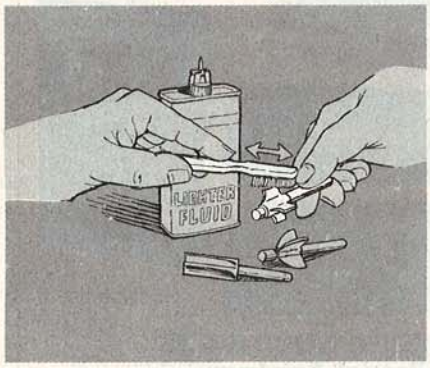
Those little foam brushes are great, but they dry out between coats. TIP: Store them for the second coat in zipper-locking plastic freezer bags. They're airtight, so they will keep the brushes pliable until you need them.

Trueing curved cuts



Curved cuts made with a saber saw aren't top-to-bottom square because the blade leans. TIP: Use both a saber saw and router for a true edge. Make the cutout with the saber saw blade set at an angle away from the piece. Turn the board over and rout away excess with a carbide straight cutter bit. Set the bearing guide to protrude halfway below the board.

Brush away buildup



Resin and contact adhesive build up on router bits, reducing cutting efficiency. TIP: To clean yours, apply lighter fluid, or gum and pitch remover, and scrub them with a toothbrush. Apply periodically.

Continued on page 29

STERLING HOMECRAFTSMAN BOOKS
The Best Name In Do-It-Yourself!

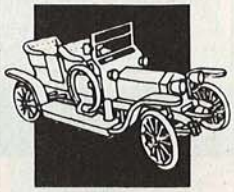
BLIZZARD'S WONDERFUL WOODEN TOYS
by Richard Blizzard

The ultimate toy book—more than 50 toys are in this oversized project book for every level of woodworker—from simple to complicated toys, large scale riding toys to miniatures.

Every project includes a detailed cutting list, careful directions and clear large drawings, plus almost every one is illustrated in gorgeous full color. The toys are fabulous—they move, turn, spin, roll or they create a miniature world—and will bring hours of happiness for any child. Discover how to make:

- ★ **Dump trucks and a miniature garage**
- ★ **A Ride-in mobile crane and 1902 truck**
- ★ **Play house and furniture**
- ★ **Land Rover and Fork Lift truck**
- ★ **Space station and spaceships**
- ★ **Sandbox (complete with a cover, a working crane and hopper)**
- ★ **Rocking llama**
- ★ **Doll House**
- ★ **and the most incredible 1907 Rolls Royce Silver Ghost, with over 200 parts, 11 pages of detailed plans, painting and upholstery construction.**

The plans alone are worth many times the cost of this book. 224 pages, 8¼ × 11¾, 48 photographs (9 in full color), many diagrams, 134 pages of plans **Paper $9.95**



MAKING WOOD SIGNS
by Patrick Spielman

Learn how to make professional looking wood signs as a hobby or a full-time business from a single book. Complete instructions include:

- ★ **Wood, Tools**
- ★ **Cutout Letters**
- ★ **Hand-Carved Signs**
- ★ **Designing, Lettering**
- ★ **Routed Signs**
- ★ **Large Signs**
- ★ **Sandblasting**
- ★ **Finishing**

The styles range from rustic to modern with complete step-by-step techniques anyone can follow. Over 200 photos with four pages in color show hundreds of signs and techniques. There are 10 complete alphabets and many sets of numbers and decorations to trace and enlarge. Wood signs make a marvelous personalized gift to give, but you may like it so much, you'll make one for yourself first! 144 pages, 6½ × 8¼, many photographs (17 in full color) and drawings, appendix, index **Paper $6.95**

ROUTER HANDBOOK
by Patrick Spielman

Finally! The definitive guide to a revolutionary woodworking tool that belongs in every workshop. Patrick Spielman explains every step of its operation, and includes an incredible variety of routers, bits and accessories.

With 600 easy to follow photos and illustrations, you'll find it an incredible source of information. Discover:

- ★ **Scores of available routers with an analysis of advantages and disadvantages**
- ★ **Techniques for making and fitting carving designs on wood surfaces and creating panels, cabinets, doors and wood signs**
- ★ **Routing techniques for dovetails plastic laminates joints and surfaces as well as the use of templates and patterns**
- ★ **Money-saving ways to make jigs and fixtures that will help in unusual routing techniques and production carving machines**
- ★ **Overarm and pin-routing techniques**

All this plus patterns and instructions for dozens of projects that incorporates all this know-how. 224 pages, 8 × 10, 510 photographs, 80 line drawings, patterns, index **Paper $9.95**

• • •

PLANECRAFT: A Woodworker's Handbook *by John Sainsbury*

Step-by-step, master craftsman John Sainsbury provides instructions for beginner and seasoned pro alike to use an incredible variety of these marvelously efficient hand and power tools. Learn how to assemble, adjust, sharpen, handle, set up and care for dozens of different planes—some ancient, others brand new—and best of all learn to use each to complete a wide variety of tasks. Discover how to:

- ★ **make mitred boxes**
- ★ **make several moulding styles**
- ★ **make a butt, tongue & groove, dowel, corner, joints.**
- ★ **start mortises for haunched tenons**
- ★ **make multiple reeds**
- ★ **make return beads or dados**
- ★ **make doors, door panels or fit drawers**

Whether you own or are buying any plane—block, rebate, plow, combination or multi circular router, power or even a scraper—this book has all the information, even down to comparisons between manufacturers and models. Nothing is omitted, no basic operating procedure or specialized technique—making this a shop reference you can't afford to be without. 192 pages, 8 × 10, over 250 photographs, drawings and diagrams, bibliography, glossary, index **Paper $9.95**

THE CRAFTSMAN WOODTURNER *by Peter Child*

World famous for his turning—his projects and for his years of teaching expertise (people travel from all over the world to study with him) Peter Child is one of the giants of woodturning. In this newly revised expanded edition, in paperback for the first time, he has included all the most recent equipment, techniques, tools and innovations.

The first section covers every aspect of woodturning tools and techniques, showing in almost 150 workshop photos plus diagrams:

- ★ **All about the lathe and how it works**
- ★ **Drilling**
- ★ **Reversing rotation**
- ★ **Bowl turning—outside, inside, finishing & polishing**
- ★ **High speed turning**
- ★ **Flat work**
- ★ **Spindle and between center turning**
- ★ **Multi-purpose check**

Plus, in the second section practical examples of all these techniques—goblets, egg cups, peppermills, cheese and chopping boards, tables, lamps, dishes, jars, containers of all sizes and shapes, and dozens of other designs. He even covers woodburning and laminated and checkered turning. *BONUS:* Turning with unseasoned wood, wood selection, and even making copies of pieces you admire. 256 pages, 7½ × 9¾, 140 photographs and 10 line illustrations, index **Paper $12.95**

MAKING WOOD DECOYS
by Patrick Spielman

Both beginners and advanced woodworkers can now turn out classic working and decorative wood decoys from the easy, step-by-step directions of an expert craftsman. Over 200 photos (15 ducks in full color) and 24 popular scaled patterns help illustrate how to draw, carve, paint, and finish your decoys. Includes types of wood, essential equipment (decoys can be made with both hand and machine tools), the intricacies of feather detailing and shaping techniques, as well as tips and advice on how to develop your own style when creating these classics. Bonus features:

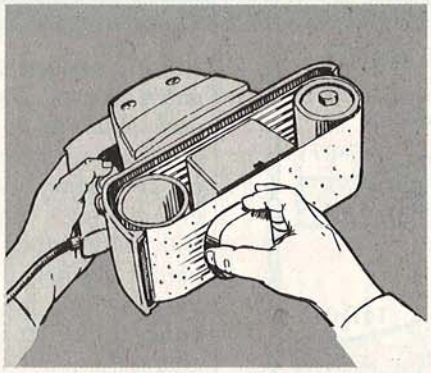
- ★ **Eye size and color chart for individual duck species**
- ★ **Magnificent gallery of wood decoys by master carvers**

Craftsmen, hunters, and collectors will delight in this definitive work. 160 pages, 8 × 10, over 200 photographs (4 pages in full color), plus many diagrams, index **Paper $8.95**

STERLING PUBLISHING CO., INC.

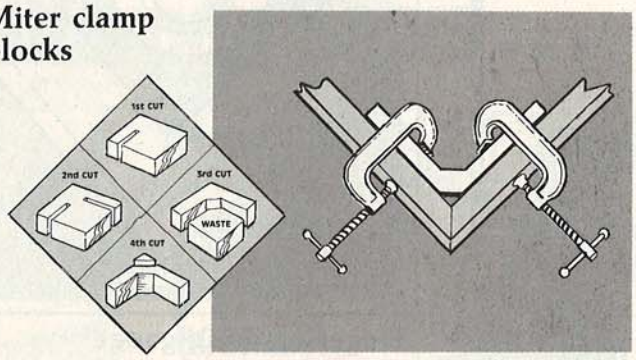
TIPS FROM YOUR SHOP (AND OURS)

Sander belt revitalizer



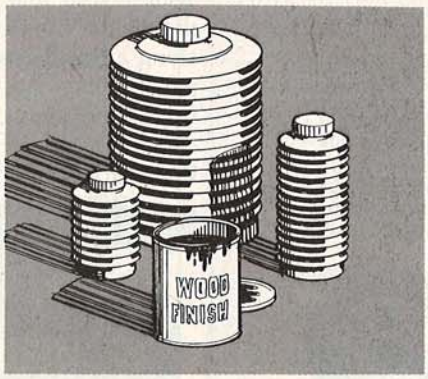
Sander belts clog up quickly and need replacing. TIPS: An old, hard, crepe-soled, shoe heel does a great job of removing resin and sawdust buildup. Hold it against the moving belt and watch the belt come clean.

Miter clamp blocks



Sometimes, clamp blocks become glued to the miter joint. TIP: Cut practically glue-proof ones from blocks of scrap plywood or hardword. Make your cuts in the order shown here. The fourth cut is a chamfer that provides space between the block and the joint so squeeze-out won't adhere.

Collapsible varnish storage



Partially filled varnish cans tend to "skin over" quickly. TIP: Pour the remaining unused varnish into a plastic, bellows-type container obtainable from photographic equipment suppliers; it allows you to squeeze out any air that's inside before capping. The less air, the less reaction.

Continued on page 30

STERLING WOODWORKING BOOKS ARE AVAILABLE AT THESE FINE OUTLETS

ARIZONA

The Cutting Edge of Arizona
10844 N. 23rd Ave.
Phoenix, AZ 85029
602/997-8665

CALIFORNIA

R. Sorsky Bookseller
3845 N. Blackstone Ave.
Fresno, CA 93726
209/227-2901

The Cutting Edge
3871 Grand View Blvd.
Los Angeles, CA 90066
213/390-9723

The Cutting Edge of San Diego
7626 Miramar Rd., Ste. 3500
San Diego, CA 92126
619/695-3990

Hardwoods Center
2611 South Harbor Blvd.
Santa Ana, CA 92704
714/540-7117

COLORADO

Paxton Beautiful Woods
Frank Paxton Lumber Co.
4837 Jackson
Denver, CO 80216
303/399-6810

FLORIDA

Constantines Wood Center of Florida, Inc.
1040 E. Oakland Park Blvd.
Ft. Lauderdale, FL 33334
305/561-1716

GEORGIA

Highland Hardware
1045 N. Highland Ave. NE
Atlanta, GA 30306
404/872-4466

ILLINOIS

Berland's House of Tools
1524 Centre Circle
Downers Grove, IL 60515
312/620-0026

INDIANA

The Wood-Craftsman's Store
2116 W. Coliseum Blvd.
Ft. Wayne, IN 46808
219/482-4822

Johnson's Workbench
51315 U.S. 33 North
South Bend, IN 46637
219/277-8350

IOWA

The Woodcraft Shop
419 E. 59th St.
Davenport, IA 52806
319/386-5318

Paxton Beautiful Woods
Frank Paxton Lumber Co.
1400 Market St.
Des Moines, IA 50309
515/283-2131

KENTUCKY

Manny's Woodworker's Place
602 S. Broadway
Lexington, KY 40508
606/255-5444

Bob Morgan Woodworking Supplies
1123 Bardstown Rd.
Louisville, KY 40204
502/456-2545

LOUISIANA

Kent Courtney's Woodshed
The Carver's Journal
625 W. Main
PO Box 626
Broussard, LA 70518
318/837-9470

MASSACHUSETTS

Trend-lines, Inc.
170 Commercial St.
Malden, MA 02148
617/324-5500

Woodcraft Supply Corp.
41 Atlantic Ave.
PO Box 4000
Woburn, MA 01888
617/935-5860

MICHIGAN

Johnson's Workbench
563 N. Cochran Ave.
Charlotte, MI 48813
517/543-2727

Daiek Woodworks
Bench Mark for Quality
2013 Austin St.
Troy, MI 48084
313/689-0230

MINNESOTA

Wood Carvers Supply, Inc.
Complete Wood Working Outfitters
3056 Excelsior Blvd.
Minneapolis, MN 55416
612/927-7491

Meisel Hardware Specialties
PO Box 258
Mound, MN 55364
612/472-5542

The Woodworker's Store
21801 Industrial Blvd.
Rogers, MN 55374
612/428-4101

MISSOURI

Paxton Beautiful Woods
Frank Paxton Lumber Co.
6311 St. John Ave.
Kansas City, MO 64123
816/483-7000

Skates Belting & Supply Co.
321 Southwest Blvd.
Kansas City, MO 64108
800/821-5041 or 816/421-4158

The Wood & Shop
5605 N. Lindbergh
St. Louis, MO 63042
314/731-2761

NEBRASKA

Midwest Woodworkers Supply Inc.
Fine Tools & Hardwoods
13209 I St.
Omaha, NE 68137
401/330-5444

NEW JERSEY

Tool Chest, Inc.
45 Emerson Plaza E.
Emerson, NJ 07630
201/261-8665

NEW MEXICO

Paxton Beautiful Woods
Frank Paxton Lumber Co.
1909 Bellamah NW
Albuquerque, NM 87104
505/243-7891

Woodpecker's Tool, Inc.
614 Agua Fria St.
Santa Fe, NM 87501
505/988-2288

NEW YORK

Albert Constantines & Sons, Inc.
2050 Eastchester Rd.
Bronx, NY 10461
212/792-1600 (Mail Order)

Garrett Wade
161 Avenue of the Americas
New York, NY 10013
212/807-1155

Pittsford Lumber and Woodshop
50 State St.
Pittsford, NY 14534
716/586-1877

Cryder Creek Wood Shoppe, Inc.
Complete selection of turning wood, tools and accessories
101 Commercial Ave. E.
Whitesville, NY 14897
607/356-3303

OHIO

Shopsmith, Inc.
6640 Poe Ave.
Dayton, OH 45414
513/898-6070

OKLAHOMA

Paxton Beautiful Woods
Frank Paxton Lumber Co.
1815 S. Agnew Ave.
Oklahoma City, OK 73148
405/235-4411

Paxton Beautiful Woods
Frank Paxton Lumber Co.
5420 S. 99th East Ave.
Tulsa, OK 74145
918/665-2411

PENNSYLVANIA

Exotic Woodshed
65 N. York Rd.
Warminster, PA 18974
215/672-2257

TENNESSEE

Hardwoods of Memphis, Inc.
PO Box 12449
Memphis, TN 38182-0449
901/452-9663 or 800/321-5239

The Woodworker's Shoppe
Specializing in fine tools and hardwoods
5513 Brainerd Rd.
Chattanooga, TN 37411
615/855-0400

TEXAS

Paxton Beautiful Woods
Frank Paxton Lumber Co.
1105 Sixth Ave.
Carrollton (Dallas), TX 75006
214/245-1192

Paxton Beautiful Woods
Frank Paxton Lumber Co.
2825 Hemphill
Ft. Worth, TX 76110
817/927-0611

Wood World
1351 S. Floyd Rd., Ste. 101
Richardson, TX 75081
214/669-9130

WASHINGTON

The Wooden Boat Shop
1007 NE Boat St.
Seattle, WA 98105
206/634-3600

WISCONSIN

Punkin Hollow Wood and Tool
N34 W24041 Captiol Dr.
Pewaukee, WI 53072
800/558-8665

AVAILABLE NATIONALLY AT B. DALTON BOOKSELLERS

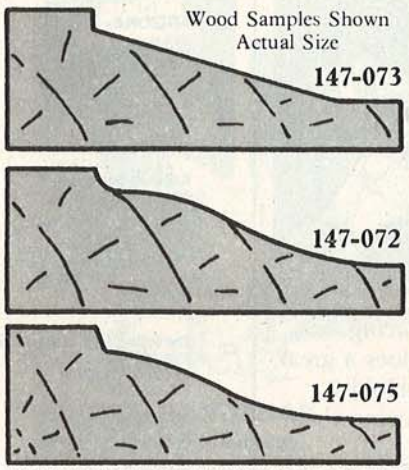
Now You Can Make Beautiful Raised Panels With Your 1/2" Spindle Shaper

Freud 3-wing cutters measuring 4.91" in diameter with 3/4" bore and furnished with 1/2" bushings. Finely honed carbide tips cut through hardwood easily. Run counterclockwise with face up or clockwise with face down. Special anti-kickback design promotes safety. *For 3/4" Stock*

NEW FROM FREUD

Introductory Price $109.00
Buy 2 or more, $99.00 each

Wood Samples Shown Actual Size



Woodworker's Supply (OF NEW MEXICO)
5604 ALAMEDA N.E.
ALBUQUERQUE, N.M. 87113

ORDER TOLL FREE
1-800-645-9292

QTY	CATALOG #	PRICE	TOTAL
		PACKING & INSURED DELIVERY	$3.50
		GRAND TOTAL	

NAME
ADDRESS
CITY STATE ZIP
M/C OR VISA NUMBER
EXP. DATE

Our catalog doesn't just sell you things. It teaches you things.

The Garrett Wade Catalog is a new, 212-page collection of woodworking hand tools, machinery, finishing supplies and accessories that are simply the finest available. Anywhere.

And besides offering quality tools from around the world, we also give you a lot of quality advice. On woodworking techniques. On picking the proper tool for a particular job. On finishing, sharpening, clamping and more.

The catalog is filled with superb photography, honest specifications and reliable descriptions. It's neatly divided into seventeen sections, including a section on our Swiss INJECTA INCA power tools. And throughout the year, our catalog owners will receive several handy supplements–*free of charge.*

Just send in the coupon below with $3.00, and we'll send out your copy of the 1985 Garrett Wade Catalog. It just may prove to be the most useful tool you own.

GARRETT WADE COMPANY — The Yankee Wood Craftsman

Garrett Wade Co., Dept. 214
161 Avenue of the Americas
New York, N.Y. 10013
Gentlemen:
Send your complete 212-page catalog of woodworking tools, machinery, and accessories. Enclosed is $3.

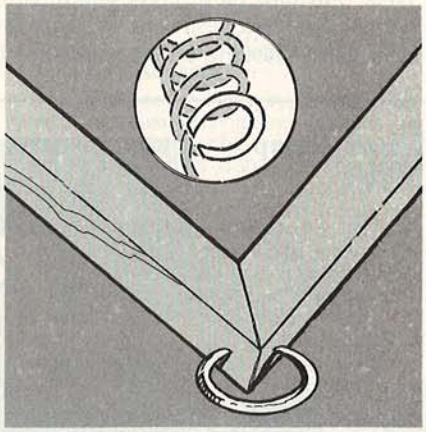
☐ I would like *only* the following sections of the catalog, for 50¢ each:
☐ INJECTA INCA ☐ Carving ☐ Finishing

Enclosed is $_____
Name_____
Address_____
City_____
State_____ Zip_____

TIPS FROM YOUR SHOP (AND OURS)

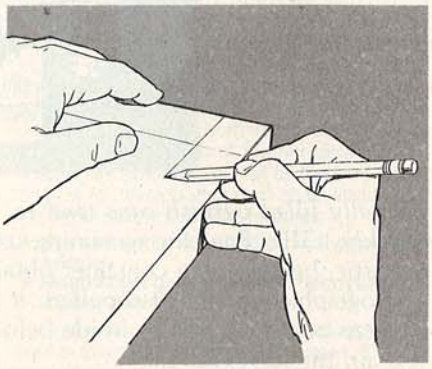
Spring miter clamps

All of a sudden you can't find the miter clamps. Misplaced? Lost? In use? What to do? Make extras you'll always have around from an old coil spring about the size found in a mattress. Clip out a section with cutters, then twist or bend until it lies flat. File each end of the piece to a point (the sharper the point, the better it will hold). After gluing the joint, spread the clamp with both hands and place on joint. Later, fill and sand holes.



Finger marking gauge

No searching for a straightedge with this always-at-hand technique. TIP: Here's an easy trick for marking rough layouts or dividing boards into approximate cuts. Cradle a pencil between thumb and index finger, resting it against your middle finger. By sliding the tip of your middle finger along a board's edge, you'll mark a parallel line. Adjust your middle finger's position on the pencil to control distance from the edge. Watch for splinters.

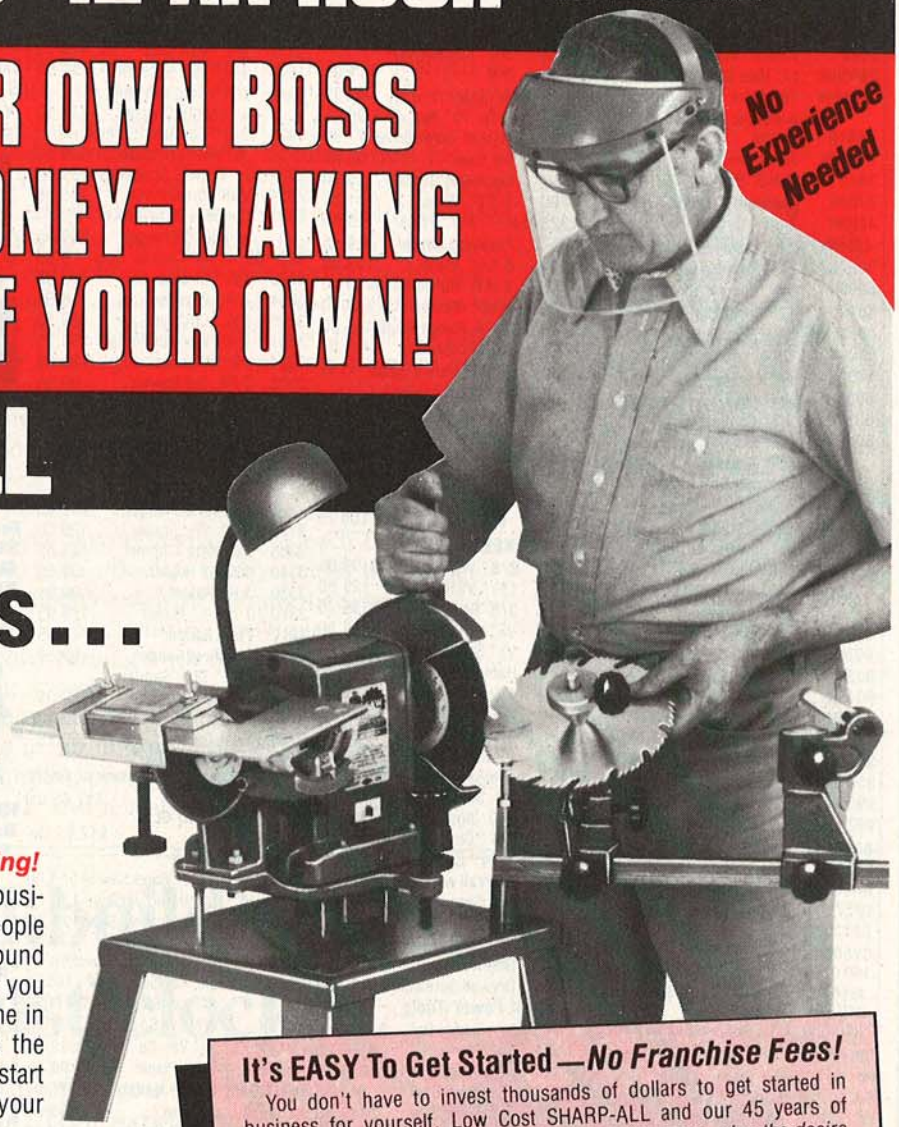


EARN UP TO $12 AN HOUR

TURN EXTRA TIME INTO EXTRA INCOME!

BE YOUR OWN BOSS IN A MONEY-MAKING BUSINESS OF YOUR OWN!

No Experience Needed



SHARP ALL

lets you Sharpen Saws . . .

Shop and Garden Tools for Home and Industry

NOW! ***Use your SPARETIME to BEAT inflation and the high cost of living!***

With Sharp-All it's easy to start your own business. No selling is involved, no inventory. People bring in their work . . . you take in year round CASH Profits and keep 90¢ out of every dollar you earn. Work sparetime or fulltime right at home in your garage, basement or tool shed. Work the hours you want — FREE Book tells how to start your own business even while working at your regular job.

Big PROFITS — Plenty of business waiting for qualified men.

Every home and business has saws and tools that need periodic sharpening. There's plenty of business waiting for the man who can sharpen saws, planer knives, jointer blades, wood chisels, scissors, pinking shears, snips, lawnmowers, axes and other garden, shop and home tools. Sharp-All does ALL these jobs and more . . . quickly, and at a big profit. You will be sharpening headquarters for carpenters, builders, lumberyards, factories, home workshops and hobbyists . . . hundreds of jobs right in your own neighborhood.

It's EASY To Get Started—*No Franchise Fees!*

You don't have to invest thousands of dollars to get started in business for yourself. Low Cost SHARP-ALL and our 45 years of experience in helping sincere men earn extra income, *plus the desire to get ahead* is all you need. Fully illustrated Operators Manual gives clear, step-by-step instructions, shows exactly how to sharpen each tool, where to get business, what to charge, how to get free advertising . . . all the "tricks of the trade". And, SHARP-ALL does the kind of precision job that brings customers back time after time.

Send for FREE Book "Lifetime Security." ***Do It Today!***

There is NO OBLIGATION and NO SALESMAN Will Call!

ACT NOW! *Coupon Brings Full Details!*

SEND FOR FREE FACTS TODAY!

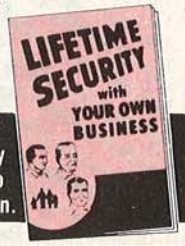
You risk nothing by accepting this offer to see how easily you can turn your spare time into Big CASH Profits with your own Complete Sharpening Shop. Send coupon or mail postcard for full details on our exclusive

30-Day FREE Trial Offer!

FREE Booklet gives full details—

Our Free Book tells how to start a profitable, lifetime home sharpening business, how we help you grow, how we'll finance you.

Send for your copy today. No obligation.



No Obligation . . . No Salesman

FOLEY BELSAW

FOLEY-BELSAW CO.
60367 FIELD BLDG.
KANSAS CITY, MO. 64111

FREE BOOK

RUSH COUPON TODAY!

Please send my FREE copy of your book "Lifetime Security" and full details on your 30-Day Free Trial Offer!

Name _____

Address _____

City _____ State _____ Zip _____

FOLEY BELSAW CO. 60367 **FIELD BUILDING, KANSAS CITY, MO. 64111**

TREND-LINES BEATS ANY AD THIS ISSUE

If another prepaid price is lower, we match the price and give you a gift certificate worth $5.00 when purchasing from our catalog. Few restrictions apply.

This ad expires October 31, 1984 watch for next ad

Freight prepaid in all U.S.A. on orders of $35.00 or more.

Under $35.00 add $2.00 per order. Misprints subject to correction.

Extra charge to Hawaii & Alaska on Stationary Tools

SPECIAL SALE TO READERS OF THIS AD!

You Must Mention This Ad When Ordering.

800-343-3248 Nationwide

800-322-6100 Mass.

617-884-8882 Non-Order Calls

TREND-LINES, INC.

375J Beacham St.
P.O. Box 6447J
Chelsea, MA 02150

Minimum Order $15.00

30 day money back guarantee

Examine any item in your home or shop. If it's not what you expected, return it in original condition for a full refund.

MAKITA TOOLS

1100	3¾" Planer Kit	$168.75
1805B	6-1/8" Planer Kit	278.75
1900BW	3¼" Planer w/cs	97.95
2030	12" Planer/Jointer	1399.00
2040	15-5/8" Planer	1295.00
2400BW	10" Mitre Saw w/blade	259.50
2401BW	10" Mitre Saw w/blade. w/electric brake	226.50
3601B	Router	128.95
3608BK	Router w/case	85.95
3612	3 H.P. Router	189.95
3700B	Laminate Trimmer	84.25
4200N	4-3/8" Circular Saw	94.50
4301BV	Vr. Sp. Orbital Jig Saw	129.95
5007NB	7¼" Circular Saw	103.95
5008NB	8¼" Circular Saw	105.00
5012B	12" Chain Saw	119.95
5081DW	3-3/8" Cord. Saw	110.40
5201NA	10¼" Circular Saw	226.50
5402A	16" Circular Saw	395.00
6000R	Uni-Drill	106.00
6010D	3/8" Cordless Drill	79.95
6010DL	Cordless Drill w/charger light & case	99.50
6010DWK	Cordless Drill w/Charger & case	88.75
6012HDW	Cord. Drill Kit 2-Sp.	105.95
6013BR	½" Reversible Drill	119.00
6300LR	½" Angle Drill	152.20
6510LVR	3/8" Dril-Rev.	69.00
6710DW	Cord. Screwdriver	107.10
6800DBV	Drywall Screwdriver	97.50
9030	1-1/8"x21" Belt	123.50
9035	Finishing Sander	49.95
9045B	Finishing Sander	99.50
9045N	Dustless Sander	112.50
9207SPB	7" Sander Polisher	136.95
9401	4"x24" Belt Sander	171.95
9501BKIT	4" Sander-Grinder Kit	85.75
9900B	3"x21" Belt Sander	125.50
9924DB	3"x24" Belt Sander	132.75
B04510	Finishing Sander	46.95
B04530	6" Round Finish Sander	52.95
DA3000	3/8" Angle Drill	116.50
DP3720	3/8" Reversible Dril	56.90
DP4700	Drill Reversible	96.95
GV5000	Disc Sander	49.95
HP1030	Hammer Drill	105.00
JG1600	Jig Saw Single Sp.	91.25
JR3000V	Recipro. Saw	134.75
JR3000W	2 Sp. Reciprosaw Kit	124.75

PONY CLAMP FIXTURES

	Each	Pkg. 6
No. 50 ¾" Pipe Clamp	7.70	6.95 ea
No. 52 ½" Pipe Clamp	6.90	6.40 ea
No. 1215 (WEB) 15"	6.40	5.80 ea
No. 7456 Clamp Pads	2.50	2.25 ea

JORGENSEN BAR CLAMPS (Heavy Duty)

	Each	Pkg. 6
No. 7224 24"	17.30	15.70 ea
No. 7230 30"	18.10	16.45 ea
No. 7236 36"	18.70	16.95 ea
No. 7248 48"	20.75	18.70 ea
No. 7260 60"	22.65	20.55 ea
No. 7272 72"	24.55	22.25 ea
No. 7284 84"	26.55	24.10 ea

JORGENSEN CLAMPS (Med. Duty)

No. 3712 12"	$6.15	$5.60 ea
No. 3724 24"	7.55	6.80 ea
No. 3736 36"	9.20	8.35 ea

JORGENSEN HAND SCREWS

No. 3/0 3"	$9.30	$8.40 ea
No. 0 4½"	10.90	9.85 ea
No. 1 6"	12.40	11.15 ea
No. 2 8½"	14.80	13.35 ea

JORGENSEN BAR CLAMPS (5" reach)

No. 4512 12" Open.	17.05	15.35 ea
No. 4524 24" Open.	19.05	17.15 ea
No. 4536 36" Open.	21.20	19.20 ea

JORGENSEN & PONY CLAMPS

No. 3325 3 Way Edging	$5.40	$4.90 ea
No. 1623 3" Hold Down	7.20	6.40 ea
No. 3202HT 2" Spring	2.15	1.90 ea

9x11 Non-Loading Silicon Carbide

Grit	A Weight	Pack of 100
400,360,320,280,240		
220,180,150,120		$19.60
150, 120, 100		$21.95
80		23.70
60		28.90
50		32.05
40		38.30

RYOBI TOOLS

B7075	3x21 Belt Sander	$118.95
B7100	3x24 Belt Sander	148.50
B7200A	4x24 Belt Sander	167.90
D1010	3/8" Var. Sp. Drill	89.50
D1015A	3/8" Screwdriver/ Drill	111.95
D1310	½" Drill	89.95
D1320R	2 Sp. ½" Rev. Drill	99.95
E3700A	Drywall Screwdriver	77.95
JS-60	Jig Saw	99.95
JSE-60	Electronic Jigsaw	125.90
L-120U	3-5/8" Planer	81.25
L-1323 ALS	3¼" Planer	129.95
LS-35	Finishing Sander	46.95
L-580	6-1/8" Planer	189.00
R-150	1 H.P. Plunge Router	88.00
R-330	2 H.P. Router	139.70
R-500	3 H.P. Plunge Router	165.00
RA-2500	10" Radial Saw	449.95
S500A	3x5½ Finishing Sander	43.95
SU-6200	Finishing Sander ½ Sheet	89.50
TR-30	Laminate Trimmer	78.95
TS-251U	10" Miter Saw	189.95
TS-251U	w/accessories	199.95
W630	7¼" circular Saw	99.50
W730	8¼" Circular Saw	109.75

MILWAUKEE TOOLS

0228-1	3/8" VSR Drill	$ 99.95
0234-1	1½" VSR Drill	129.50
0375-1	3/8" Rev. Angle Drill	139.75
1107-1	½" VSR D Handle	147.50
1660-1	½" SSR Compact	174.65
5397	Hammer Drill Kit	177.50
5660	1½ HP Router	142.00
5680	2 HP Router	224.95
5935	4"x24" Belt Sander	219.95
6014	½ Sheet Sander	125.50
6145	4½" Angle Grinder	107.50
6255	VR. SP. Jigsaw	149.95
6287	H.D. Jigsaw Kit	225.00
6367	7¼" Circular Saw	119.95
6460	10¼" Circular Saw	249.75
6507	Sawzall w/case	137.50
6543-1	¼" Screwdriver	137.50
6749-1	Magnum Screwdriver	123.50
6750-1	H.D. Drywall Screwdriver	119.50
6753-1	Drywall Screwdriver	79.95

Rockwell Power Tools

11-072	32" Radial Drill	$ 379.95
22-651	13" Planer	1250.00
28-140	10" Band Saw	349.75
28-243	14" Band Saw	518.50
31-205	8" Table Saw	149.50
33-150	Sawbuck	525.00
33-990	10" Radial Arm Saw	489.95
34-010	Miter Saw	158.95
34-410	10" Contractors Saw	725.00
34-695	10" Homecraft Saw	295.00
34-710	10" Tilting Arbor Saw	474.50
37-609	6" Jointer	295.00
43-122	Wood Shaper	539.95
46-140	11" Lathe	399.95

All Rockwell includes motors

FREUD SAW BLADES 10" = 5/8" Bore, 12" = 1" Bore

Carbide Tipped

No.	Size	Teeth	Use	Price
LU72M10	10"	40	General	$38.50
LU73M10	10"	60	Cut-Off	42.95
LU73M12	12"	72	Cut-Off	76.90
LU78M10	10"	80	Plastic	83.50
LU82M10	10"	60	Cut-Off	48.50
LU82M12	12"	72	Cut-Off	85.95
LU84M10	10"	40	Comb.	42.50
LU84M11	10"	50	Comb.	44.40
LU85M10	10"	80	Cut-Off	72.00
LM72M10	10"	24	Ripping	41.90
TR100	3 blades & Dado set			264.95
DS306	6" Dado			98.95
DS308	8" Dado			119.50

SUN GOLD SANDING SHEETS

9x11 Aluminum Oxide C Weight

Black & Decker Industrial Tools

1165	3/8" Angle Drill	$119.50
1179	3/8" VAR. SP. Drill	69.95
1180	3/8" VSR Holgun®	99.95
1310-10	1/2" VSR Drill	94.50
1311	1/2" VSR Drill	119.75
1575	3/8" VSR Scrudrill®	119.50
1940	3/8" Cordless Drill w/98060 Charger	118.50
1975	3/8" Cordless Screwdriver w/98060 Charger	129.50
2034-10	Drywall Screwdriver	91.50
2054	VSR Screwdriver	155.00
2931	Cordless Screwdriver w/98060 Charger	159.95
3027-09	7¼" Circular Saw	79.95
3030	7¼" Circular Saw	119.95
3034	7¼" Circular Saw	118.65
3035	8¼" Circular Saw	129.50
3051	7¼" Wormdrive Saw	158.25
3091	10" Miter Saw	189.95
3103	2 SP. Cut Sawkit	99.95
3105	VAR. SP. Cut Sawkit	109.50
3107	VAR. SP. Orbital Cut Sawkit	119.50
3123	Port. Band Sawkit	305.00
3141	Cordless Jigsaw w/98060 Charger	149.95
3157	VAR. SP. Jigsaw	129.50
3265	Laminate Trimmer	145.65
3310	1½ HP Router	139.50
3330	1 HP Router	99.95
3370-10	3¼" Planer	129.95
4010	Palm Sander	48.95
4018	½ Sheet Sander	99.50
4247	4½" Disc Sander/ Grinder	69.95
4260	Power File	189.50
6750	Heat Gun	69.75

Watco Danish Oil

Natural, Medium, Dark, Black or Colors

$5.70 Qt. $17.65 Gal

TITE BOND WOOD GLUE

$5.75 Qt. $12.95 Gal

HITACHI TOOLS

B-600A	14½" Band Saw	$1554.00
CJ65VA	Electronic Jigsaw	132.75
CR10V	Reciprocating Saw	124.75
C10FA	10" Miter Saw	279.00
DRC-10	Cordless Screwdriver	98.50
DR-10	3/8" Drill/Screwdriver	108.00
D6V	¼" Var. Speed Rev. Drill	71.00
D10V	3/8" V Sp R Drill	74.95
D13V	½" Var. Sp. Rev. Drill	99.75
F-20A	3¼" Planer	99.75
F1000A	Planer/Jointer	1375.00
JH-60A	Jig Saw	103.50
P50	6-5/8" Planer	210.00
P100F	12" Planer	1095.00
PSM-7	7¼" Circular Saw	114.95
PSM-8	8" Circular Saw	141.90
SB-110	4x24 Belt Sander 2-Speed w/dust bag	183.00
SO-110A	½ Sheet Sander w/dust bag	119.95
SB-75	3x21 Belt Sander-2 Speed w/Dust Bag	134.75
SB8T	3x24 Belt Sander-2 Speed w/Dust Bag	149.95
TR-6	Laminate Trimmer	92.25
TR-8	1 H.P. Plunge Router	126.95
TR-12	3 H.P. Plunge Router	194.75
W6V	Screwdriver	94.50

SUNGOLD X-WEIGHT SANDING BELTS

Sold in packs of 10 only — Outlasts regular 10 belts 2 to 1.50

Size	Grit	10	
3"x21"	120,100	$.98 ea	$.84 ea
Assortment of 10 $15.95	80	1.00 ea	.86 ea
	60	1.05 ea	.92 ea
	50	1.07 ea	.94 ea
	40	1.10 ea	.97 ea
3"x24"	120,100	1.20 ea	.93 ea
Assortment of 10 16.95	80	1.22 ea	.97 ea
	60	1.26 ea	1.12 ea
	50	1.31 ea	1.15 ea
	40	1.34 ea	1.18 ea
4"x24"	120,100	1.68 ea	1.46 ea
Assortment of 10 21.95	80	1.73 ea	1.51 ea
	60	1.78 ea	1.64 ea
	50	1.85 ea	1.70 ea
	40	1.89 ea	1.76 ea

Free Stand! **Makita 12" Planer-Jointer 2030 $1399.00**

Free Stand! **Makita 15-5/8" Planer 2040 $1295.00**

Super Sale!

Hitachi 14½" Bandsaw B-600A $1554.00

Hitachi Planer-Jointer F1000A $1375.00

Hitachi 12" Planer P100F $1095.00

NEW SALE ITEMS! MILWAUKEE & ROCKWELL

BLACK & DECKER MAIL IN REBATES

Model	List	Our Price	Rebate	Your Net Cost
1179 3/8" Drill	113.00	69.95	10.00	59.95
1180 3/8" Drill	144.00	99.95	10.00	89.95
1575 3/8" Scrugun	169.00	119.50	10.00	109.50
3030 7¼" Circ.	155.00	119.95	10.00	109.95
3051 7¼" Wormdrive	232.00	158.25	20.00	138.25
3103 Cut Saw	163.00	99.95	10.00	89.95
3105 Cut Saw	170.00	109.50	10.00	99.50
3107 Cut Saw	183.00	119.50	10.00	109.50
4010 Palm Sander	80.00	48.95	10.00	38.95
4247 Disc Grinder	102.00	69.95	10.00	59.95

FREE CATALOG WITH ORDER OR BY WRITING TO POST OFFICE BOX.

NEW! **Makita ½" 3 H.P. Plunge Router 3612BR $189.95**

IT'S BACK! **Makita 16" Circular Saw 5402A $395.00**

Blade Sharpener $119.95 Blade Holder $39.95

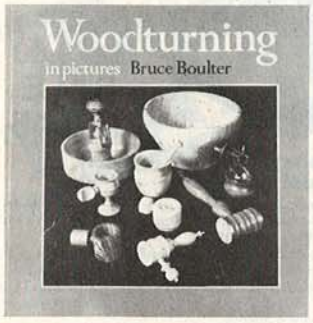
Makita Palm Sander B04510 $46.95

NEW! **Makita 6" Round Palm Sander B04530 $52.95**

NEW! **Makita 8¼" Circular Saw 5008NB $105.00**

BOOKS WORTH READING

Woodturning in Pictures
by Bruce Boulter.
Sterling Publishing Co., Inc.,
Two Park Ave.,
New York, NY
10016. 1983.



144 pages.
$12.95

An informative, inspirational book for woodturners of all abilities. Bruce Boulter combines lessons learned in thirty years of woodturning with nearly 500 photographs to compile a practical guide to lathe work. With a familiar and encouraging style, Boulter offers his methods and ideas without becoming bogged down in technical or artistic discussions. Most pages have three to four photographs that illustrate the author's concise, step-by-step instructions on proper turning technique. While the quality and number of these illustrations are certainly the book's strength, they also present a problem. Boulter has neglected to somehow identify each of his photographs, and this makes the references in the text confusing.

The author begins with two brief sections on sharpening—an important topic often not given enough attention. Next, he talks about preparing stock for the lathe, and then devotes a chapter to each of the principal turning tools. Boulter neatly guides the reader through the fundamentals of turning between the centers while he is discussing the tools. He then addresses bowl turning with the same thorough and enlightening approach.

One he has laid this groundwork, Boulter explores a broad range of turning possibilities. He describes dozens of turning projects, from nutcrackers to goblets to sandglasses, and reveals his methods for each.

Print this article

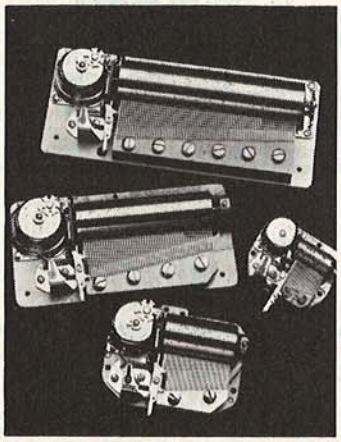
"I have discovered from the pupils I teach that the necessity for tool preparation is in no way appreciated. It gives me great pleasure to show them that there is no secret in preparation, and as one of them said to me recently, 'you know, it is much more simple to do it the right way.'"

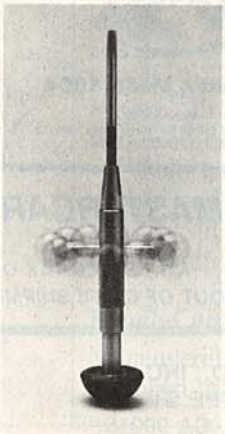
Mason & Sullivan **clockbuilding supplies for more than just clocks.**

We use our 38 years experience to offer you the highest quality clock movements available. That experience helps us recognize superiority in other products as well. In our catalogue you'll find, among other things, the finest Swiss music movements. You'll also find the most efficient screwdriver in the world.

— Because we know fine workmanship, so will you —

BOSTON PARLOUR CLOCK


SWISS MUSIC MOVEMENTS


SPIN TIGHTEN SCREWDRIVER

Send $2 to receive a one year subscription to our 56-page color clockbuilding supply catalogue. Includes clock kits, dials, movements, weather instruments, hardware, tools, books and accessories.

Mason & Sullivan
"Fine Clockmakers Since 1947"
Dept. 2360, W. Yarmouth, Cape Cod, MA 02673

BOSCH Power Tools

BLOW OUT SALE!

LIST $159.00
SALE $87.45

Orbital Finishing Sander, Model 1288 034

- With 10,000 orbits per minute the counter-balanced, vibration-free 1288 034 gives maximum performance with less operator fatigue — it weighs just 6 pounds.
- The compact design allows close-quarter work — orbit diameter is 3/32".
- The bearings and drive mechanism are completely sealed against dust contamination.
- Lever action, positive-paper clamping system saves valuable production time — sheet capacity is 4½" x 11".
- Double Insulated, UL listed, 115V AC.

SUPPLIED WITH: auxiliary handle and assorted sandpaper sheets.

LIST $155.00
SALE $93.00

3/8" 2-Speed, Variable Speed, Reversing Cordless Drill, Model 1920VSRK

- Totally portable, no-cord required, plus amazing value and work power.
- Reversing switch for screwdriving, freeing bound-up bits.
- 2 speeds to fit torque and speed to job.
- Recharges in just 1 hour; charger has automatic cut-off.
- Delivers 300/650 RPM under full charge.
- Switch lock prevents accidental discharges/ tool switch-ons.
- Drill weighs only 2.75 lbs.
- UL Listed, complies to OSHA.

LIST $179.00
SALE $98.45

Orbital Finishing Sander, Model 1288 934

- Powerful and efficient dust-removal system prevents sandpaper clogging — ensures smoother finish and longer sandpaper life.
- The counter-balanced, vibration-free 1288 934 gives maximum performance with less operator fatigue.
- The compact design allows close-quarter work — it's 12" long, 5⅞" wide, and 7⅜" high with dust bag, and weighs 6 pounds.
- The bearings and drive mechanism are completely sealed against dust contamination.
- Lever action, positive-paper clamping system saves valuable production time.
- Double Insulated, UL listed, 115V AC.

SUPPLIED WITH: auxiliary handle, assorted sandpaper sheets and dust bag.

Orbital Action Jig Saws, Model 1581VS

- New 520 watt motor provides more power for the most demanding cutting applications.
- Adjustable foot plate tilts left and right up to 45° with locks at 0° and 45° bevel for most cutting applications.
- Top handle design with trigger switch puts your hand over the work for extra control under heavy loads.
- Model 1581 produces 3,100 strokes/minute for cutting wood and light gauge metal.
- Model 1581VS has a variable speed switch: 500-3,100 strokes/minute. It produces full output at low speeds needed for cutting very hard materials.
- 115V, Double Insulated, UL Listed, OSHA, 5.75 lbs.

Supplied with: Three assorted blades, blade locking screwdriver, anti-splintering device, hex key.

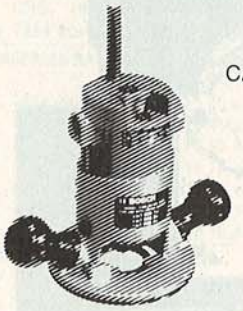
LIST $225.00
SALE $135.00

Orbital Action Jig Saw, Model 1582VS

- 520 watt motor provides more power for the most demanding industrial cutting jobs.
- Adjustable foot plate tilts left and right up to 45° with locks at 0° and 45° bevel cutting applications.
- Model 1582 produces 3,100 strokes/minute for cutting wood and light gauge metal.
- Model 1582VS has a variable speed switch: 500-3,100 strokes/minute. It produces full output at low speeds needed for cutting very hard materials.
- Barrel grip and removable rotating handle allow precise pattern cutting.
- 115V, Double Insulated, UL Listed, OSHA, 5.5 lbs.

Supplied with: Three assorted blades, blade locking screwdriver, anti-splintering device, hex key.

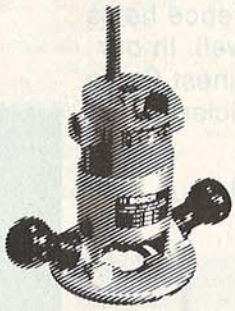
LIST $209.00
SALE $125.40



CALL FOR PRICES AND AVAILABILITY

1 HP Router, Model 1601

- Excellent power to weight ratio.
- Captive templet guide for quick, easy seating.
- Fully Insulated, 115V AC, UL Listed.



CALL FOR PRICES AND AVAILABILITY

1¾ HP Router, Model 1604

- Excellent power to weight ratio.
- Captive templet guide for quick, easy seating.
- Double Insulated, 115VAC, UL Listed.

3" x 24" Belt Sander, w/Dust Collector, Model 1272D

- At 1500 SFPM, the 1272D is rated super-duty for production sanding applications. It sands flush to vertical surfaces for close-quarter work.
- Built-in vacuum minimizes airborne dust.
- Heavy-duty tracking system with twist knob allows easy belt adjustment.
- Lever-action release provides quick belt changing.
- Carbide wear-inserts protect housing from belt damage.

VISA AND MASTERCARD ACCEPTED

FREIGHT PRE-PAID ON ALL TOOLS

NO!! SALES TAX ON OUT OF STATE SHIPMENTS

5% DISCOUNT TO WALK-IN CUSTOMERS CASH OR CHECK

D & D SAW & SUPPLY
6162 MISSION GORGE RD.
SAN DIEGO, CA 92120
(619) 280-9320

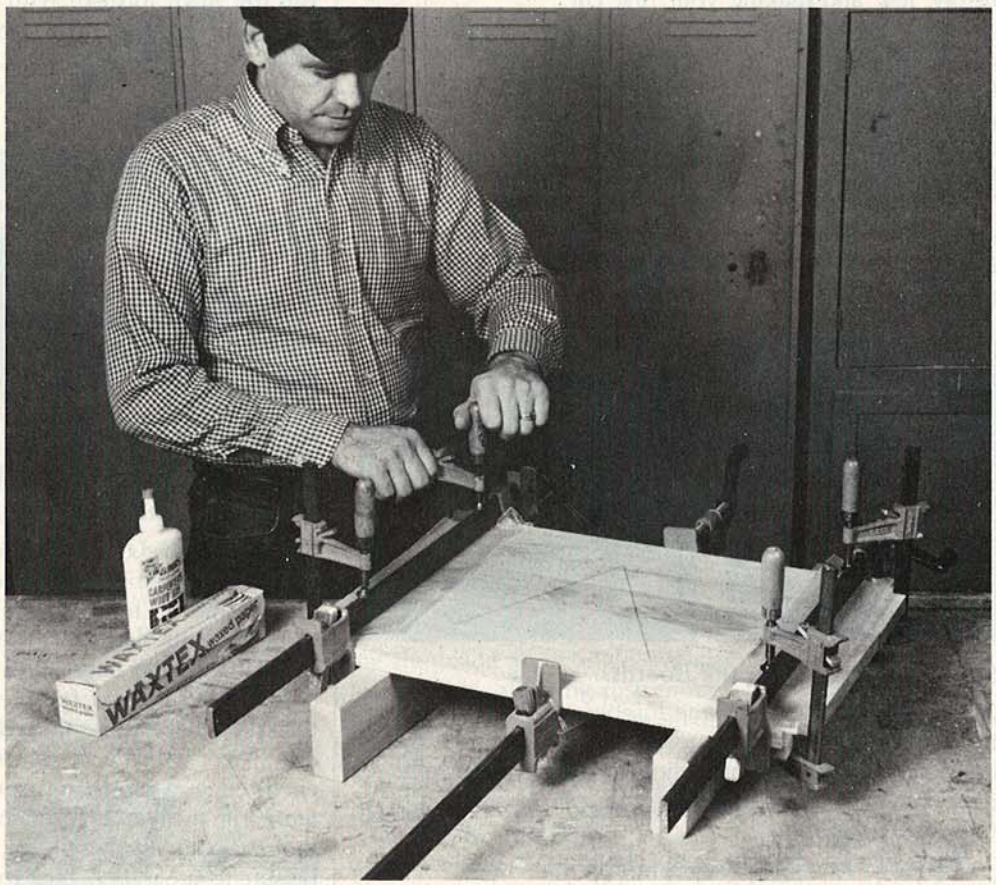
RODMAN CO., INC.
1827 S. HOPE ST
LOS ANGELES, CA 90015
(213) 749-6441

A & W ELECTRIC INC.
2337 S. BROADWAY
SANTA ANA, CA 92707
(714) 540-3060

AAA WHOLESALE TOOL & SUPPLY
17309 ROSCOE BLVD.
NORTHRIDGE, CA 91325
(818) 996-1800

how to edge-join boards

SHOP TESTED



Print this article

Knowing how to edge-join boards brings with it a couple of advantages every woodworker should have. First, this know-how allows you to build larger items from solid wood than otherwise would be possible. And second, by gluing up stock, you can use boards that might otherwise be relegated to the scrap bin, and by doing so save the money you'd spend purchasing additional material.

While there are numerous (and more difficult) other ways to join wood edge-to-edge, we've opted to focus on three good (and relatively easy) ones—butt joints, dowel joints, and spline joints. Why? Two reasons, actually. We believe that in most all woodworking situations, one of these will yield good results. And further, none of the techniques requires a lot of expensive equipment.

PREPARING THE BOARDS FOR JOINING

As with most other things, how successful you are at joining boards depends greatly on how well you prepare—the mating edges in this case. No amount of clamping pressure will make up for an edge that's either uneven or out of square. In fact, you should never have to apply more than moderate pressure to any boards being glued up.

Selecting the Board(s)

First, determine how much lumber you need for your glued-up surface. No two boards have the same color and grain characteristics, and each board will react differently to humidity and temperature swings. For these reasons, it's best, *if possible*, to get all of the pieces you need from one board.

When selecting the stock, make sure it isn't bowed or cupped and that it has a grain pattern and coloration you like. If you have to get more than one length, make sure they're compatible with each other.

Rough-Cutting the Boards to Length

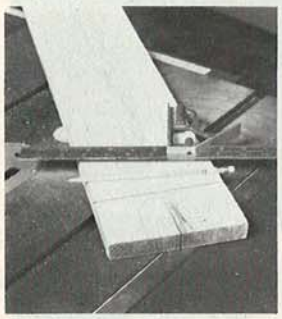
Maneuvering a long length of stock isn't easy even in the open, much less in a crowded, and usually under-

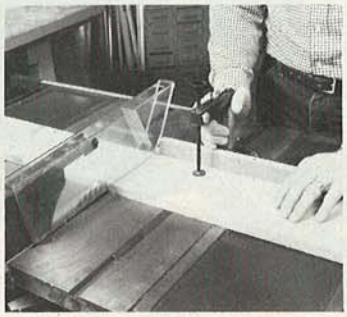
Continued

sized shop. So, it makes good sense to cut it down to size right away. Start by checking the board for splits, squaring off one end beyond the split portion as shown below, left, and making your first cut.

Now, using a tape measure, make cutoff marks at the appropriate points along the board. You'll want each board to be an inch or so longer than the finished length. This allows you to make minor alignment adjustments, square up the finished surface, and have enough length. Crosscut the stock as shown below, right.

NOTE: If the lumber you're using has been surfaced on three (S3S) or four (S4S) sides, you can skip the next section and continue with the heading Ripping the Stock to Width.





Straight-Line Ripping the Boards

As a customer service, some lumber suppliers surface three or more sides of boards because many customers don't know how to straight-line rip boards. Actually, it's a straightforward technique you can master the first time you try it.

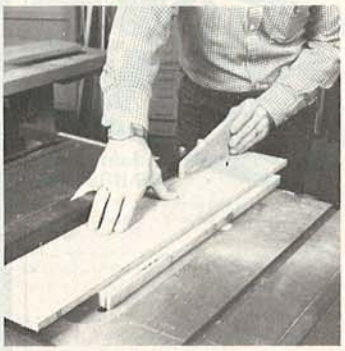
You'll need a piece of scrap plywood or lumber that has at least one straight edge and that is as long or longer than the stock you're ripping. Place the scrap on the piece you'll be ripping so the scrap extends out beyond the edge of the board by a ¼ inch or so. Tack the scrap in place with 4-penny finish nails, as near the ends as possible so the nail holes will be cut off when you cut the boards to the finished length.

Now, measure the distance from the straight edge of the scrap piece to the intended cutoff line. Set the rip fence that same distance from the blade of your table saw. After tightening down the rip fence, check the distance from either edge of the miter gauge slot to the rip fence as shown in the next column, top left photo, to ensure that the fence is parallel to the blade.

> *Comment:* Some woodworkers prefer to position the far end of the rip fence slightly farther away from the blade than the near end. They say it relieves the wood after it passes through the blade and results in less heat buildup of the blade and less burning of the edge of the stock. You may want to test this theory and see what you think.

Then, raise the saw blade to its highest position and check to make sure it is set at 90 degrees to the cutting surface. Lower the blade to its cutting height (slightly higher than the thickness of the material), then feed the stock through the saw as shown below, right. (For photographic clarity, we've shown the blade guard off.) If you're straight-line ripping narrow stock, it's best to run the stock through with the scrap piece against the tabletop rather than the way shown. This procedure gives you greater control against tipping the stock.

The above procedures also work well if you're using a radial arm saw instead of a table saw.



Ripping the Stock to Width

Once you have one of the board's edges straight, you can then rip the stock to the correct width. To do this, first set the rip fence the correct distance from the blade. If you plan to run the edges of the boards through a jointer later, allow in your calculations for the thickness that will be shaved off. Then, with the straightened edge against the rip fence, run the lumber through the saw again as shown here. Be sure to use a push stick to help feed the material through, and take care to keep your hands away from the blade.

> *Comment:* Most woodworking experts agree that to minimize the problems associated with wood's tendency to cup, it's advisable to construct joined surfaces with boards no wider than 6 inches. Some prefer to work with boards in the 3- to 5-inch range.

Making Up for Width

Lay the ripped lengths of stock next to each other, arranging them in such a way as to achieve the best grain and color match. If knots or other defects don't preclude this, lay the boards with the end grain of adjoining pieces alternating. Doing this helps prevent the joined surface from warping.

Now, on a flat surface, check the boards for a snug fit against each other. Turn all of them over and make sure all is well on the back side too. If you detect any irregularities, you will have to readjust your saw blade so it cuts at 90 degrees and run the boards through again, or if you have a jointer, run them through it. (Remember, you can't bully the boards into alignment,

even with extreme clamp pressure, if the edges of the boards aren't true.)

Turn the boards right side up again and make alignment marks on the face of the boards so you can realign them later. We use an "inverted-V" system (see photo at right), though you can mark them however you wish. These marks also help you identify the front side of the boards.

Comment: Up to this point the procedures are the same no matter which of the three joinery methods you plan to use. But from here on out, there are differences. If you plan to butt-join the boards together, you can skip the next two sections and pick up the text again at the head CLAMPING THE STOCK.

THE SPLINE JOINT — FURTHER EDGE PREPARATION AND GLUING UP

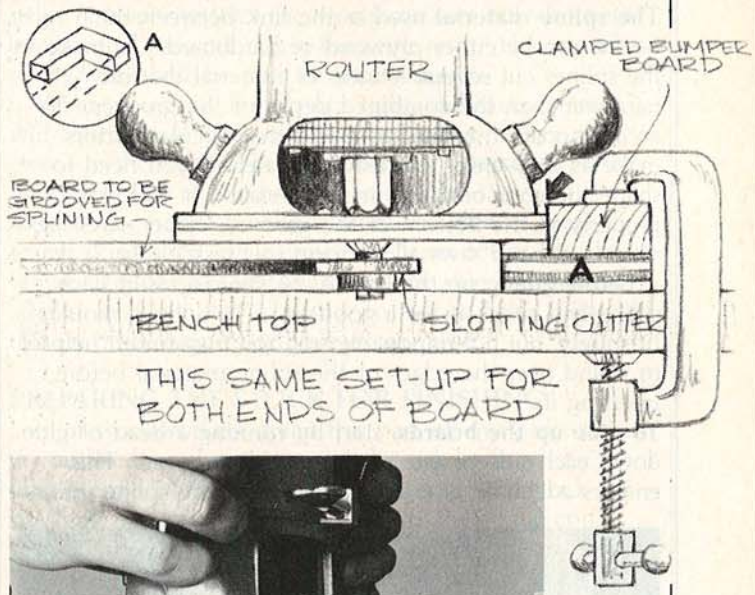
You can cut grooves in the edges of a board several different ways. Here, we show you how to do it with a router and slotting cutter and with a table saw fitted with a dado blade. We also talk about making the grooves with your table saw blade.

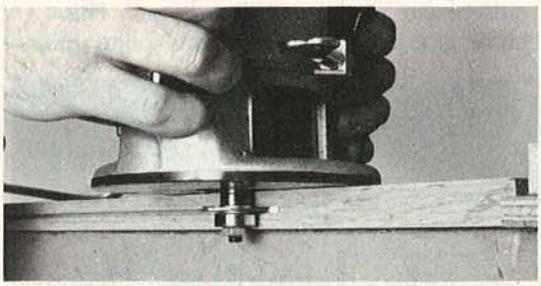
If you have a router and a slotting cutter with a ball-bearing pilot (the Bosch model we purchased cost around $24), set the depth of the cutter so the groove will be in the center of the board's edge. The photo here shows a good way to make sure of your setting. You should double-check the setting by running the cutter through a piece of scrap before trying the real thing.

Once you're satisfied with your adjustment, clamp the board to be grooved to a bench top. (Make sure you know which edges need grooves and which ones don't. We goofed once and had to rip another board and reshoot another photo of this step.)

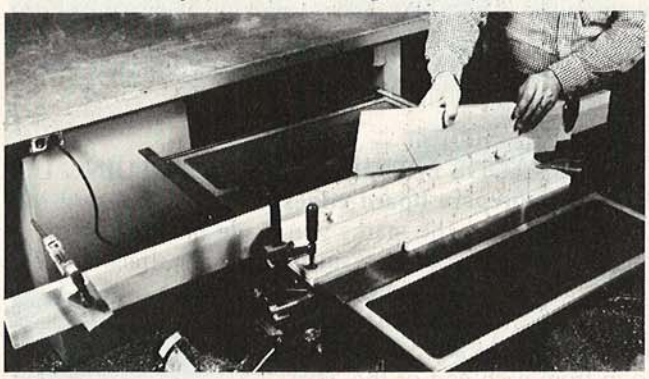
Most times, you'll want to stop the groove short of each end so the spline won't show at the ends of the joined surface. The sketch at the top of the next column shows how we accomplished this without too much difficulty. We made a plywood and scrap lumber jig that not only keeps the board from moving back and forth while being grooved but also provides for positive start and stop positions for the groove. Simply clamp the jigs in place and you're ready to rout the groove as shown in the photo beneath the sketch.

To cut grooves with a table saw, first fasten an auxiliary fence to the rip fence and fasten stop blocks to the auxiliary fence to provide positive stop and start positions for the grooves. To keep the board from entering the blade at an angle, we clamped our resawing jig to the table, allowing just enough room for the board to pass between it and the auxiliary fence.





With the arrangement shown below, the only way you can make a mistake is to lower the wrong edge of the board into the blade. Here again, you would be wise to test your cut on a scrap first to make sure the groove is centered. Typical groove depth is ½"; in ¾" material, the width can be ⅛" or ¼". As mentioned earlier, there are a couple ways to do the grooving with a table saw. If you cut ⅛"-wide grooves, your table saw blade will do the job just fine. However, if you make your grooves ¼" wide, a dado set or blade is the best way to go. Otherwise, you'll have to run all the boards through once, then adjust your fences and make another pass.



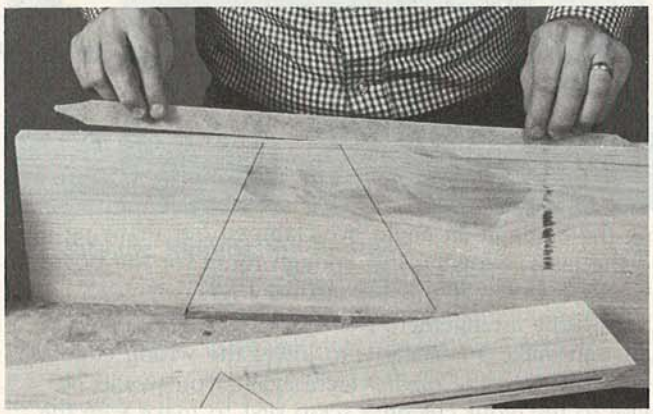
Comment: Make sure you run all of the boards through with either the front side or the back side facing the rip fence. By doing this, you can compensate for not having centered the grooves, if that's the case.

Continued

The spline material used as the link between the boards can be either plywood or hardboard. To make the splines cut several lengths of material that are 1/16" narrower than the combined depth of the grooves. To accommodate the arc-shaped cut that circular cutters make as they enter and leave a material, you need to shape the ends of the spline material so it will seat properly in the bottom of the grooves. Saber saws, jigsaws, and band saws all perform this task easily.

Before gluing up the boards, be sure to insert each spline and check it for a good fit. The splines should fit snugly, but not impossibly so. You may find it helpful to round over the edges of the spline material before inserting it.

To glue up the boards, start by running a bead of glue down each side of one of the mating grooves. This ensures adequate glue coverage. Insert the spline into

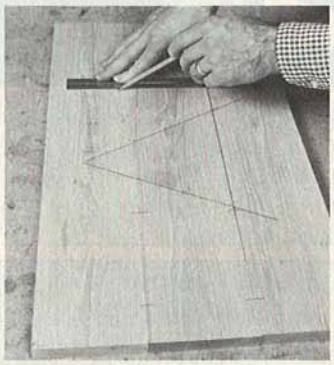


the groove as shown above. Now, spread an even coat of glue along the edge of the board. Repeat the same gluing procedure with the groove and edge surface of the mating board. Fit the boards together, carefully aligning the marks you made earlier on the face of the boards.

That's all there is to it. Now you can skip over to the head CLAMPING THE STOCK.

THE DOWEL JOINT — FURTHER EDGE PREPARATION AND GLUING UP

To further prepare board edges for gluing up, start by carefully aligning the marks you made on the face of the boards. Then, using a square or other straightedge, make a series of pencil marks as shown here. Make one set of marks an inch or so in from each end of the finished surface and several other sets equidistant from each other. Space the marks from 8 to 12 inches apart. These marks serve as register marks for a doweling jig or drill press.



Now, clamp each board into your vise, and align the register mark on the doweling jig with the marks on the board's face. (Each of the doweling jigs we've used operate somewhat differently, so you'll have to read the directions that come with each to find out exactly how it works.)

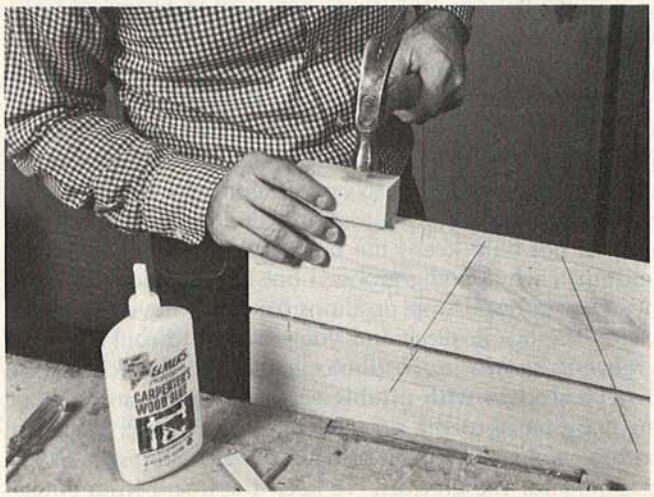
Fasten the jig to the board you're working on, then drill the hole as shown below, left. Notice that we

have a depth-gauge collar fastened to the drill bit. This stops the bit at the correct depth, which is 1/16" deeper than half the length of dowel pin you're using. (A piece of electrical tape wrapped around the drill bit will work, too.) Prepackaged hardwood dowels generally come 2 inches long in a variety of diameters.

For this project, we fashioned our own dowel pins from 1/4" dowel rod. As you can see, above, right, we fluted the pins with a slip-joint pliers to allow for escape of glue that can build up. Failure to allow for this can cause the wood to split when put under pressure.

After drilling the first hole, drive one of the dowel pins into it to make sure your depth setting is correct. If it is, drill the remainder of the holes.

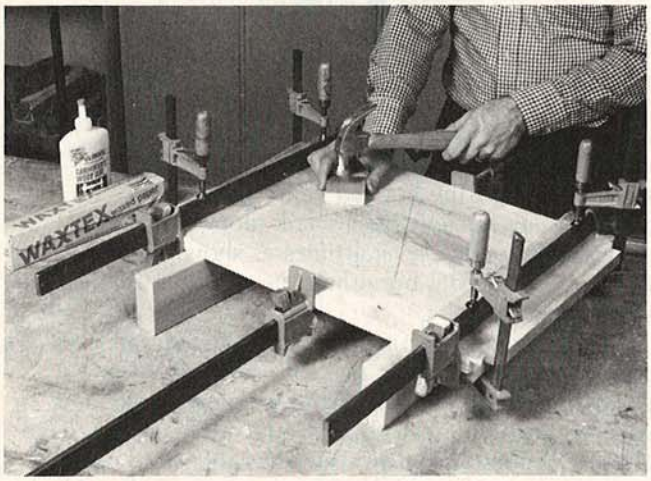
To glue up the boards, begin by dropping a bead of glue down each side of each mating hole. Insert the dowel pins and tap them home. Spread an even layer of glue on the edge of each mating board, then align the holes and tap the boards together as shown below. Don't worry too much about driving them completely together at this point; the clamps will take care of that later.



Comment: Some glues, most notably woodworker's (aliphatic resin) glue, set up rapidly, so don't waste much time between applying the glue and clamping the project. In fact, you should have everything necessary to clamp the boards together ahead of time.

CLAMPING THE STOCK

Ultimately, the glue you use will hold the boards together, but to get them into tight contact with each other, you need to clamp them for a time. How much time is a subject of discussion among woodworkers. Manufacturers of woodworker's glue often recommend that you clamp the project for 30 minutes. We clamp our projects for at least several hours, and sometimes overnight, before further machining.



The photo above depicts the way we handle the clamping procedure when gluing up stock. Note that to allow access beneath the work for clamps, the boards rest on a pair of 2×4s. Once the register marks are aligned, you can begin clamping. Start at one end, and separate the clamp from the wood with a piece of waxed paper. If you don't do this, the metal and the glue can react to each other and stain the wood.

Tighten the first clamp only enough to draw the boards fully together, then move down 12 inches and position another clamp on the opposite face of the boards. Tighten it and the remainder of the clamps as before.

Now, check the surface of the joined boards to make sure they are aligned. The closer the boards are to being flush with each other at this point, the less sanding or scraping you'll have to do later. If you've used butt joints, you may be able to tap them into better alignment, as shown in the above photo.

Tighten the clamps, but don't overdo it. Too much pressure can actually cause distortion of the joined boards—something you want to avoid at all costs.

Note that we have quick-action clamps secured to each end of the end bar clamps. This helps ensure against bowing of the surface. You can also use wood screws or scrap secured by C-clamps to get this same job done. Note also that we have scrap wood strips between the clamps and the stock we're joining. These strips not only protect the wood surfaces but also help apply equal pressure along the joint lines. Hardwood scraps work best because of their strength.

When you draw the clamps tight, the excess glue will squeeze out from between the joints. When you clean up the squeeze-out is a matter or personal preference. We like to let the glue set up for 15 to 20 minutes (or however long it takes the glue to form a tough skin), then use a chisel or scaper to pry up the semisolid glue. We've found that the skin that forms after several minutes' exposure to the air helps make this the ideal time to remove excess glue.

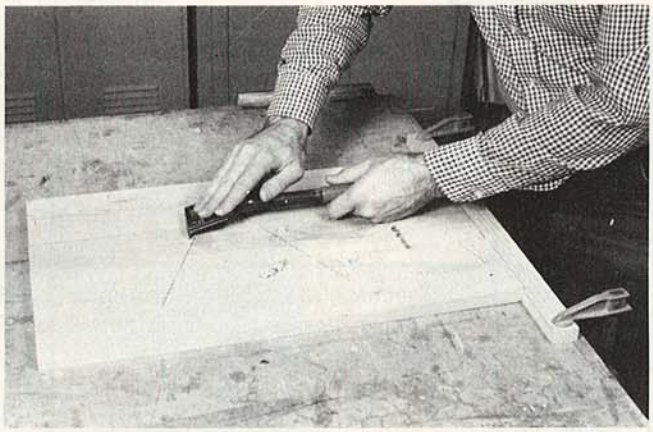
PREPARING THE STOCK FOR FINISHING

Lots of woodworkers dread this part of any project, but if you let down here, you run the risk of botching the whole project. Remember that preparing the stock for finishing is every bit as important as the actual construction of the project itself. It's also time-consuming, but rest assured that your efforts will show through in the final product.

Removing Glue Squeeze-Out

If you elected to let the glue squeeze-out harden before removing it, scraping the surface with a paint scraper works well and quickly. The photo below depicts an easy way to secure the workpiece while you're scraping it. Two quick-action clamps hold a length of scrap at the end of the workbench. This same setup works well also when using a cabinet scraper or a belt sander.

Once you have the glue removed, cut the joined boards to finished length. Large workpieces can be tricky to cut square, so work carefully when feeding your project into the saw.

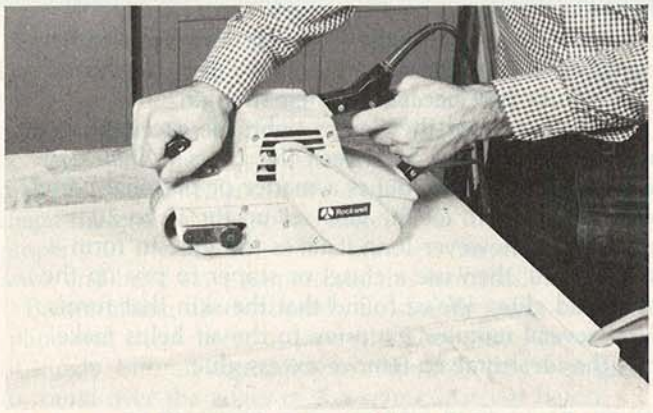


Smoothing the Surface

To even out the height discrepancies between joined boards, start by belt-sanding first with 60-grit open-coat abrasive, then with 100-grit, or using a cabinet scraper. If you belt-sand, hold the sander at a slight angle to the direction of the grain as shown in the top photo, next column, and keep the sander moving to avoid taking off too much wood in any one area.

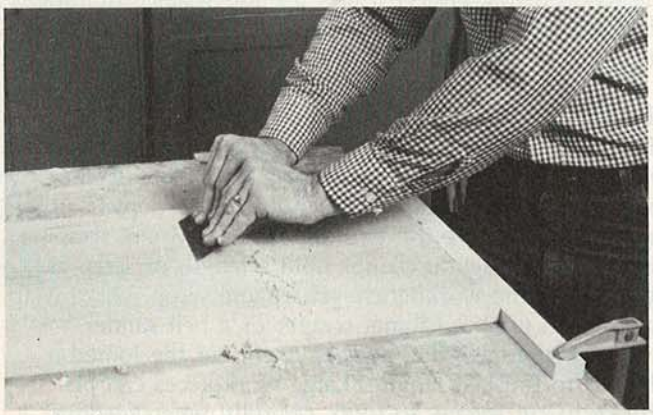
Some people prefer to use a cabinet scraper instead

Continued



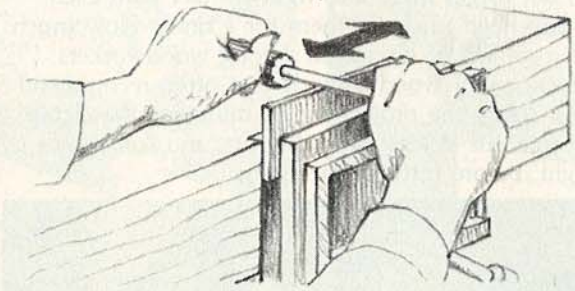
of a belt-sander to begin the smoothing process. And that's fine, but we think you can achieve the same results more quickly using a belt-sander.

To get rid of scratches that remain after belt-sanding, we use a 3"×5" hand scraper as shown below. The



key to hand scraping success is to have the scraper properly sharpened as you drag it across the surface of your project.

To sharpen (or "burnish") a hand scraper (even brand-new scrapers need this), start by clamping it in your vise. Then square off the edge of it with a file, and smooth off any file marks and wire burrs with an oil



stone. To effect the hooked edges that actually do the cutting, draw a screwdriver shank along both sides of the cutting edge several times as shown in the sketch. Commercial burnishers are available that do the same thing.

Hand-scraping will further smooth the surface, but it does leave hardly visible nicks in the wood where it begins each pass. So after hand-scraping, finish-sand with a straight-line or orbital sander fitted with 120- or 150-grit abrasive. And to round off the sharp edges of your projects, or to sand contours, use a sanding block with a soft surface under the abrasive.

When to Use Which Joint

Joint Type	Common Applications	Tools Needed	Comments
Butt	Tabletops, corners of case goods, raised panel doors, cutting boards, and other small edge-joined surfaces	Table or radial arm saw with a sharp, preferably carbide-tipped blade	Sharp tools a must. Edges have to be at 90° to achieve good results. This joint requires the least amount of machining of any joint.
Dowel	Cabinet face frames, door stiles and rails, chair legs and stretcher rails, tabletops and case goods	Table or radial arm saw, doweling jig or drill press or dowel centers and a drill guide, drill bit (ideally a brad-point drill bit)	Easy joint. Good alternative to the more difficult mortise-and-tenon joint. Dowel pin size shouldn't be less than ⅓ the thickness of the stock being joined, nor more than ½ the thickness.
Spline	Bench tops and tabletops, joining plywood to solid stock, end-joining materials, edging solid material to laminated material	Table or radial arm saw, dado set or dado blade, or sharp saw blade or a router with a slotting cutter	Best results are obtained by either a dado set or blade or a router and slotting cutter rather than with several passes with a regular saw blade.

NOW
YOU CAN BUILD IT

Print this article

On the previous several pages, we talk about how to join wood edge-to-edge. Here, though, the focus shifts to a few of the good-looking, practical things it's possible to build using your knowledge of edge-joining.

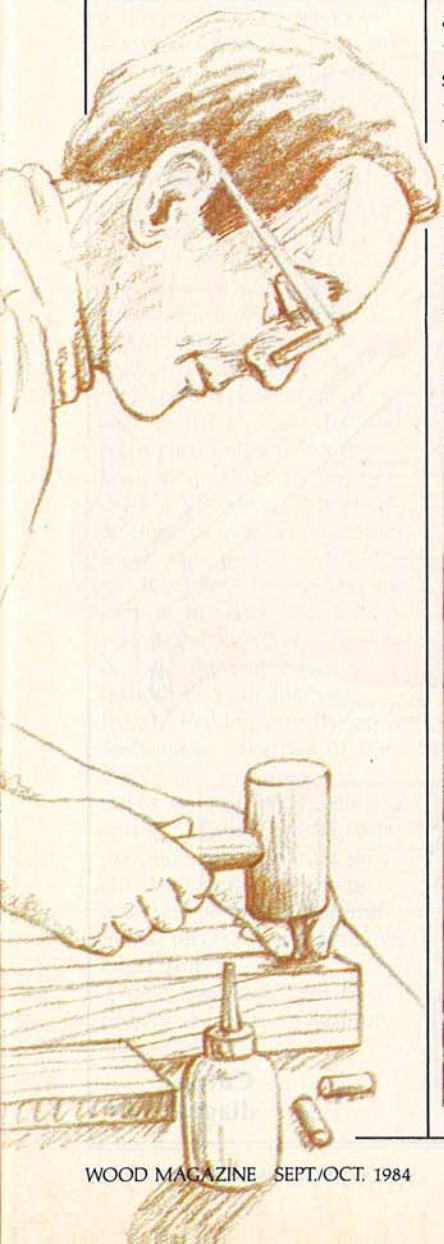
We'll bet you can't get by building just one of the cutting boards shown here, especially after people start seeing your handiwork. Each and every one of the boards is a people-pleasing gift you're bound to get more requests for.

Not only are the boards quick and easy to build, but they are also very economical—you can fashion any of them using scrap wood you probably already have around your shop. For more information on how to build these beauties, just turn the page.

And if you're feeling a bit more ambitious sometime, you may want to try your hand at our contemporary oak coffee table. Though it's a larger project than the cutting boards, the table doesn't pose any construction problems most woodworkers couldn't handle.

We've styled it in such a way that it should fit into a variety of decors. And as we mention on the opening page of the project (page *50*), its crisp lines allow for rescaling in the event you want to make matching end tables and sofa tables as well as the project we feature.

Designer: David Ashe; Photographers: Al Elder, David Jordan



SIX CLASSY cutting boards

Print this article

Looking for a great gift idea you can build in a hurry? Relax! These intriguing designs are guaranteed to please any host or hostess.

Bill of Materials					
Part Name	Finished Size			Material	No. of Pieces
	T	W	L		
A	¾″	1″	8″	cherry	7
B	¾″	⅛″	8″	maple	6
C	¾″	¼″	12″	maple	1
D	⅛″	¾″	12″	hardboard	1

Supplies: Resorcinol glue, salad bowl finish or mineral oil

The leaf

1 Prepare parts A, B, and C by ripping the stock to width. Make sure your table saw is correctly set and that you're using a good, sharp, preferably carbide-tipped, saw blade. (We did not joint the edges, but you may want to.) Next, crosscut the pieces but leave an extra ½″ on the length to allow for squaring up later.

2 Using resorcinol glue, glue up the alternating cherry and maple strips (A and B) as shown, and clamp securely. After the glue has formed a skin (about 20 minutes), remove any excess glue with a chisel or knife. Allow the glue to dry overnight.

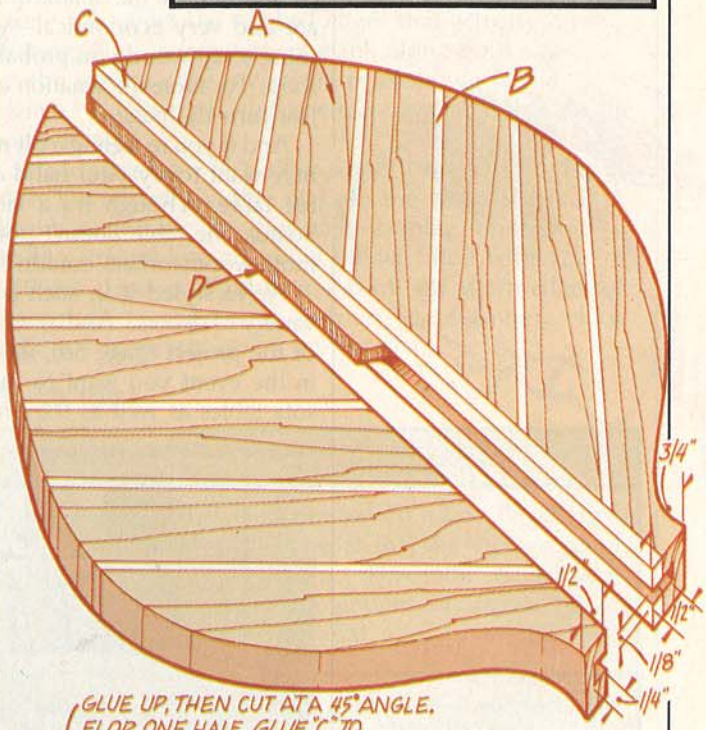
3 Sand the laminated stock smooth, then cut it to length, making sure that the ends are square.

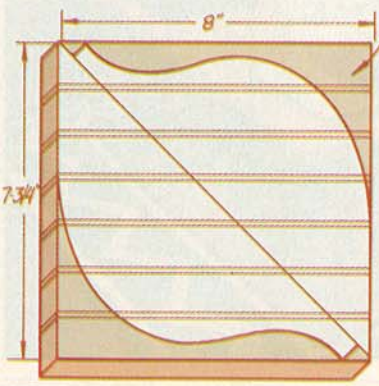
4 Cut the board on the diagonal (see the plan view) on a band saw or jigsaw. Sand smooth. If you joint the diagonal edges, make very shallow passes (1/64″) to avoid chip-out at the completion of each pass. Glue the remaining maple strip (C) to one of the halves.

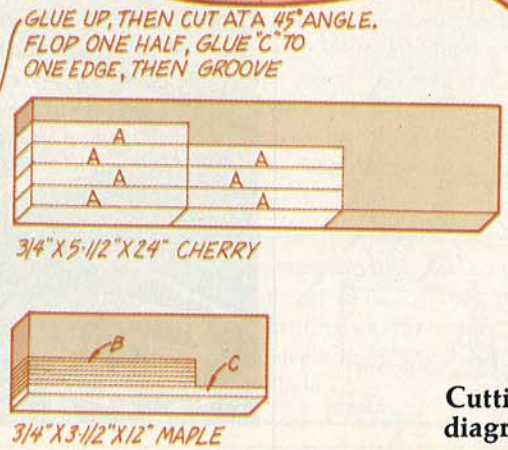
5 Flop one of the halves and mark the top side of each half with an X. With the top surface of each triangle facing the rip fence of your table saw, cut grooves along both diagonal edges to accept the spline (D). You'll need a ⅛″-wide × ½″-deep groove in the half with the added maple piece; and a ⅛″-wide × ¼″-deep groove in the other half. Apply glue to the spline, grooves, and edges, then clamp the two halves together. Let the glue set up briefly, then remove the excess. Allow the glue to dry overnight.

6 Make a cardboard leaf pattern and trace it onto the glued-up stock. With a band saw or jigsaw, cut out the shape. Sand the outside edge smooth.

7 Finish the cutting board with salad bowl finish or mineral oil.







Cutting diagram

The tray

The lucky recipient of this handsome cutting board will have a reminder of your handiwork for years to come. It's built to last. And it's large enough to double as a serving tray when the need arises.

1 Prepare the six pieces of maple stock (A) on your saw. Rip the stock to width first, then crosscut to length, plus ½". Glue and clamp these boards together two at a time, alternating the grain direction, to make three sets. Use resorcinol glue and remove any excess after the glue forms a skin. Allow these sets to dry overnight.

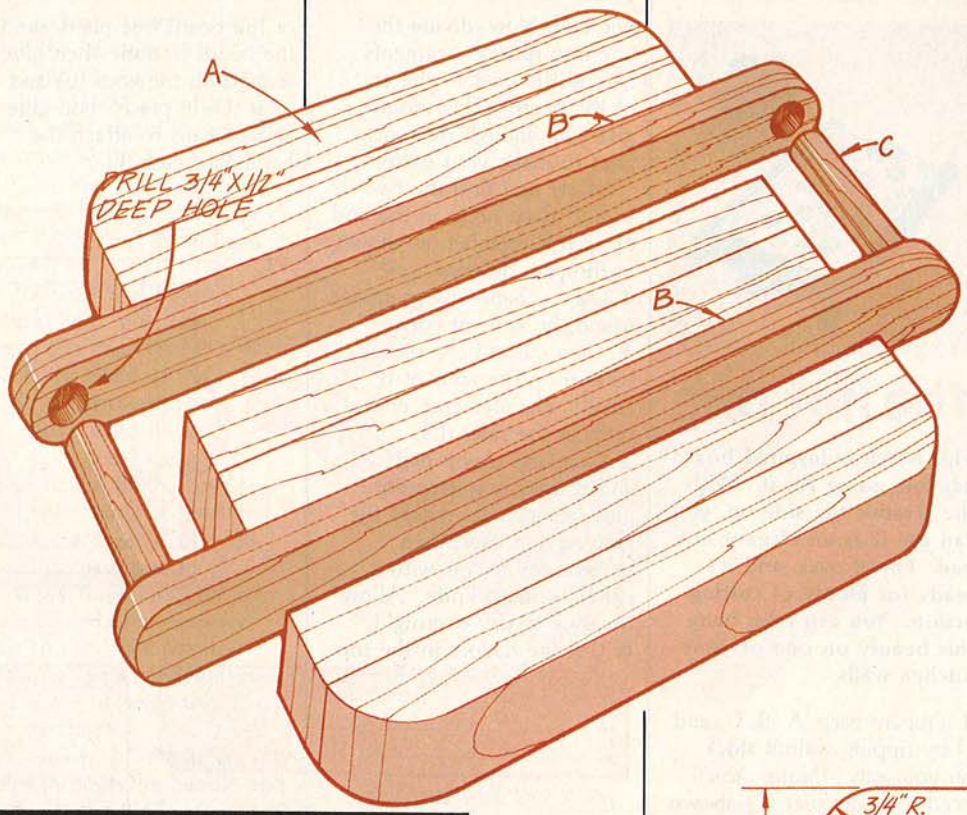
2 Cut the two pieces of walnut (B) to size on the table saw. Locate a point on each of these pieces that's ¾" from each end and on the centerline. With a compass, draw a ¾" radius from each of these points. Then, using these same points, drill a ¾"-diameter ½"-deep hole in each of the ends. Set the walnut pieces aside.

3 Sand the maple sets smooth and cut them to length, making sure the ends are square. Take two of the maple sets and mark a 1½" radius on each of the outside corners. Then, using a band saw, jig saw, or coping saw, cut the round contours on the ends of the walnut and maple pieces. Sand the sawn edges smooth.

4 The handles (C) for this project are made of walnut dowel. You can purchase walnut dowel rod through woodworker's specialty stores or catalogs. Or, if you have a lathe, you can turn the dowels. Cut the dowels to length.

5 Dry-assemble the entire project to check for fit. Disassemble, then glue all parts of the tray, using resorcinol glue. Before applying final pressure with the clamps, make any final adjustments necessary to make sure all parts are properly aligned.

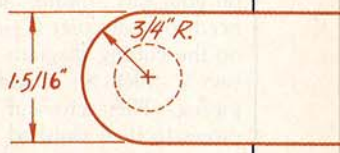
6 Allow the glue to dry overnight, then sand the tray smooth. Use salad bowl finish or mineral oil to finish the project.



Bill of Materials

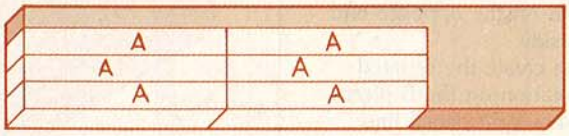
Part Name	Finished Size T	Finished Size W	Finished Size L	Material	No. of Pieces
A	1 5/16"	1½"	13¾"	maple	6
B	¾"	1 5/16"	18"	walnut	2
C	¾" dia.		4"	walnut dowel	2

Supplies: Resorcinol glue, salad bowl finish or mineral oil

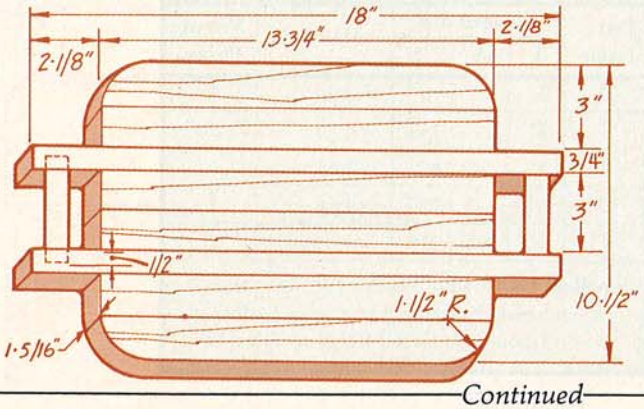


Cutting diagram

3/4"X3·1/2"X24" WALNUT



1·5/16"X5·1/2"X36" MAPLE



Continued

The hot one

This Mexican-inspired board has lots going for it. With the ceramic tile side up, you can use it as an elegant hot pad. Flip it over, and it's ready for plenty of cutting action. You can even hang this beauty on one of your kitchen walls.

1 Prepare parts A, B, C, and D by ripping walnut stock on your saw. (Note: You'll need to resaw part C—shown on the cutting diagram—into two ¼"-thick × ⅞"-wide pieces.) Then, crosscut the pieces to their finished length. (Note: Our tiles measured 3¾"×3¾". If yours differ, this will affect the dimensions shown.)

2 Using a compass, scribe a 1½" radius on one end of part A and then drill a ¾" hole through the center point. Scribe and cut a 1⅝" radius on the opposite end; set aside.

3 To create the serrated decoration on the B pieces, make a light pencil line across the width, ⅝" from one end. Now, divide the line into four ⅝" segments. Extend the lines to the end of the board. This should give you enough reference lines to make your pattern.

Locate and drill the two ¼"×¼"-deep holes in the end of each B member, as shown in the plan drawing.

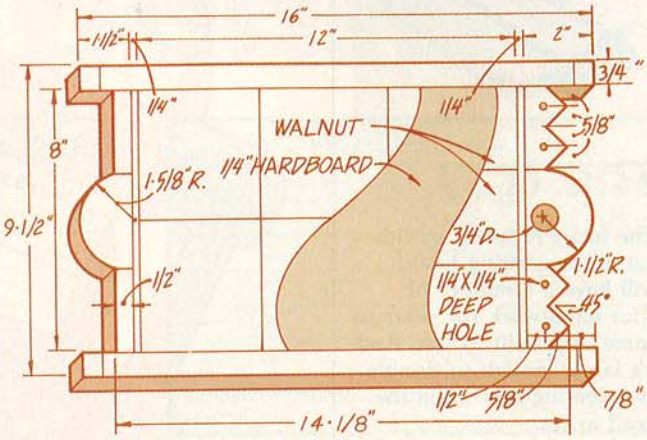
4 Using a band saw or jigsaw, round the ends of part A, then cut out the serrate pattern on the ends of B. Finally, chamfer each end of both of the sides (D).

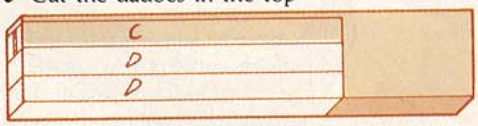
5 Glue and clamp parts A and B using a waterproof glue (resorcinol). Allow the glue to skin over, then remove any excess with a chisel or sharp knife. Allow the glue to dry overnight.

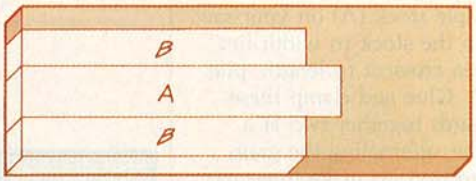
6 Cut the dadoes in the top of the board (see plan), sand the board smooth, then glue and clamp the ends (C) and sides (D) in place. Use glue and 2d nails to attach the hardboard base (E).

7 Complete the board by installing the tiles, using tile or panel adhesive.

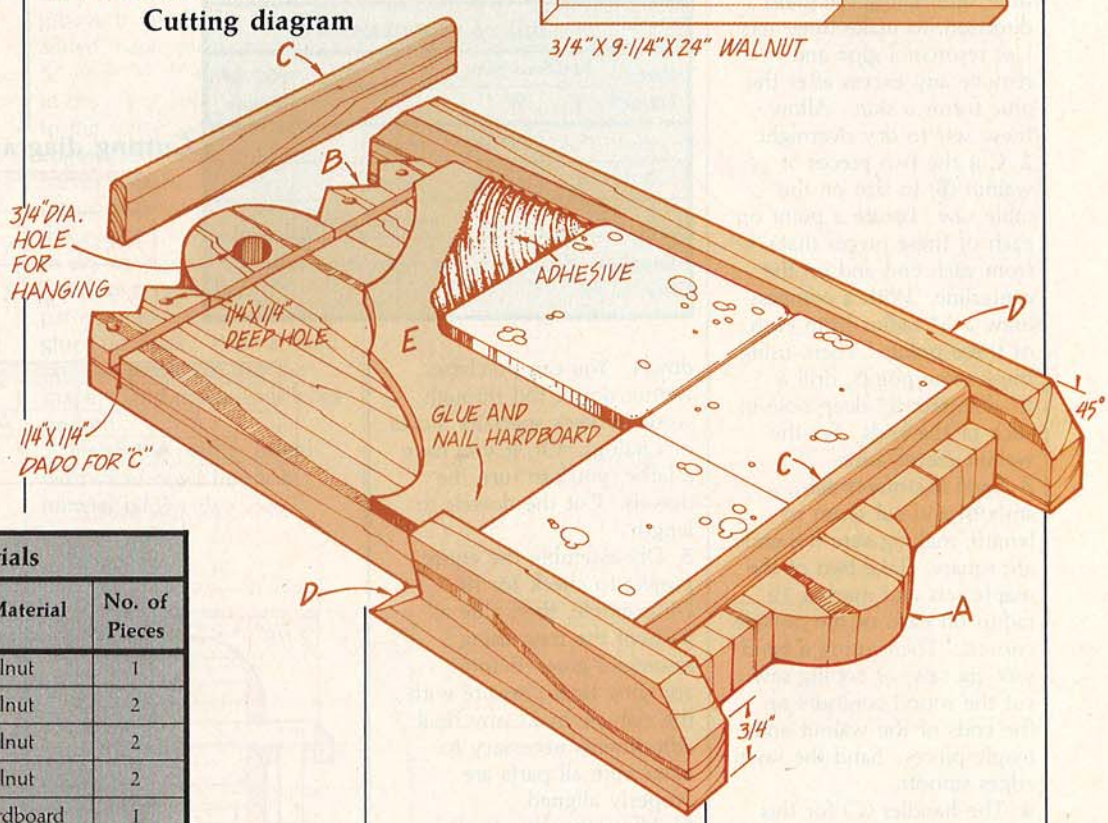
Apply finish to the wood, and after the finish has cured, grout the tile.







Cutting diagram



Bill of Materials					
Part Name	Finished Size			Material	No. of Pieces
	T	W	L		
A	¾"	3"	16"	walnut	1
B	¾"	2½"	14⅛"	walnut	2
C	¼"	⅞"	8"	walnut	2
D	¾"	1½"	16"	walnut	2
E	¼"	8"	12"	hardboard	1

Supplies: 6—ceramic tiles (¼"×3¾"×3¾"), resorcinol glue, tile or panel adhesive, grout, salad bowl finish or mineral oil.

The bonus board

Having a beautiful cutting board is one thing, but having a knife handy when you need it is quite another. Here's a nifty solution—a cutting block with a built-in knife!

1 Begin by ripping then crosscutting parts A–D to length. With a jigsaw or band saw, slice the 1/16"-wide pieces (E, F, G) off the outside of the blade.

2 Select two pieces of maple (A) and cut a 3/4" radius on two corners of each. Glue and clamp the other two maple pieces together, using resorcinol glue. After the glue has formed a skin, remove the excess with a chisel or sharp knife. Allow the glue to dry overnight.

3 The knife for this project slips into a pocket that's formed in the lamination (see plan). Lay out the knife pocket on part F, then cut out the pocket using a band saw, jigsaw, or coping saw. Glue the laminated parts (B, C, E and F), using the same gluing method as described above. Be careful to not get any glue in the knife pocket.

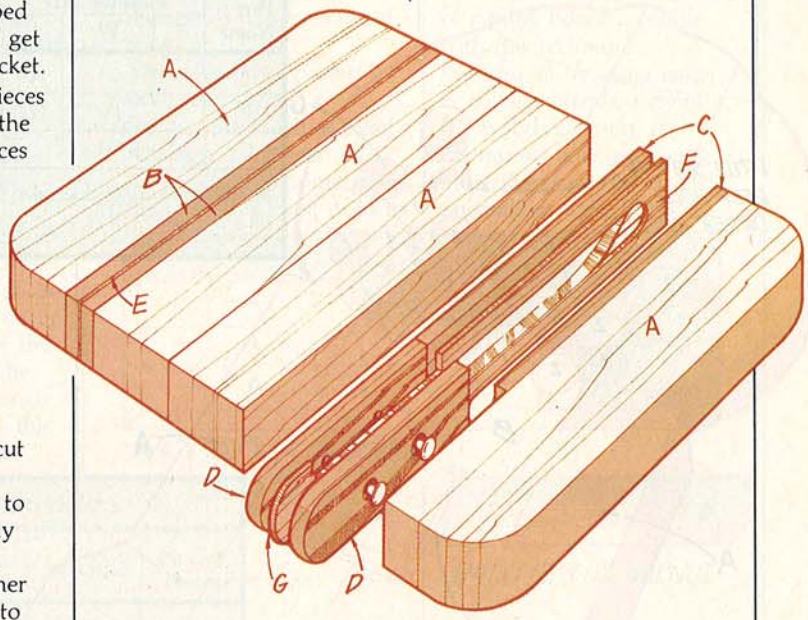
4 Glue and clamp all pieces except D and G. After the glue dries, sand all surfaces smooth.

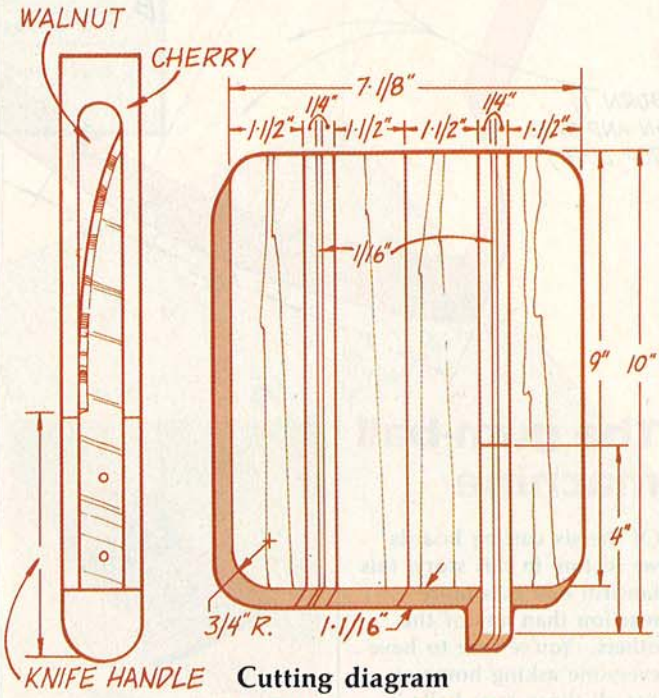
5 To make the knife handle, you must first check the thickness of the knife blade. If the blade is narrower than 1/16", you'll need to sand part G to a thickness equal to the blade. Lay the blade shank on part G, trace around it, and cut out the shank pocket.

Apply resorcinol glue to parts D and G and epoxy glue to the knife shank. Clamp these parts together and allow the assembly to dry overnight.

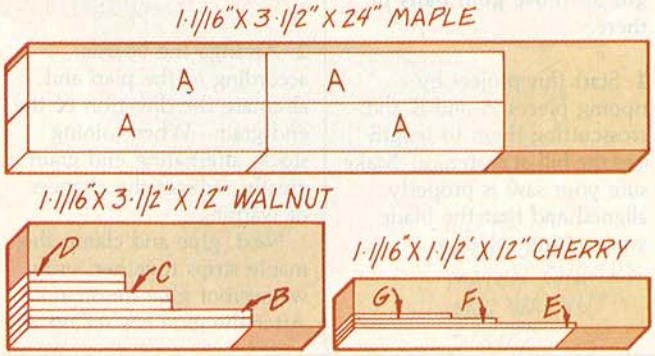
6 Drill two 1/4"-diameter holes through the handle and blade. If the blade is stainless steel, you'll need to use a special bit. Insert pieces of brass rod into the 1/4" holes and expand the rod by tapping it on an anvil with a hammer. You can substitute rivets for the rod, if desired.

7 With a rasp, round the end of the knife handle. Sand the handle (including the brass rivets) smooth. Apply two or three coats of a nontoxic finish such as salad bowl finish or mineral oil to all surfaces.





Cutting diagram



Bill of Materials

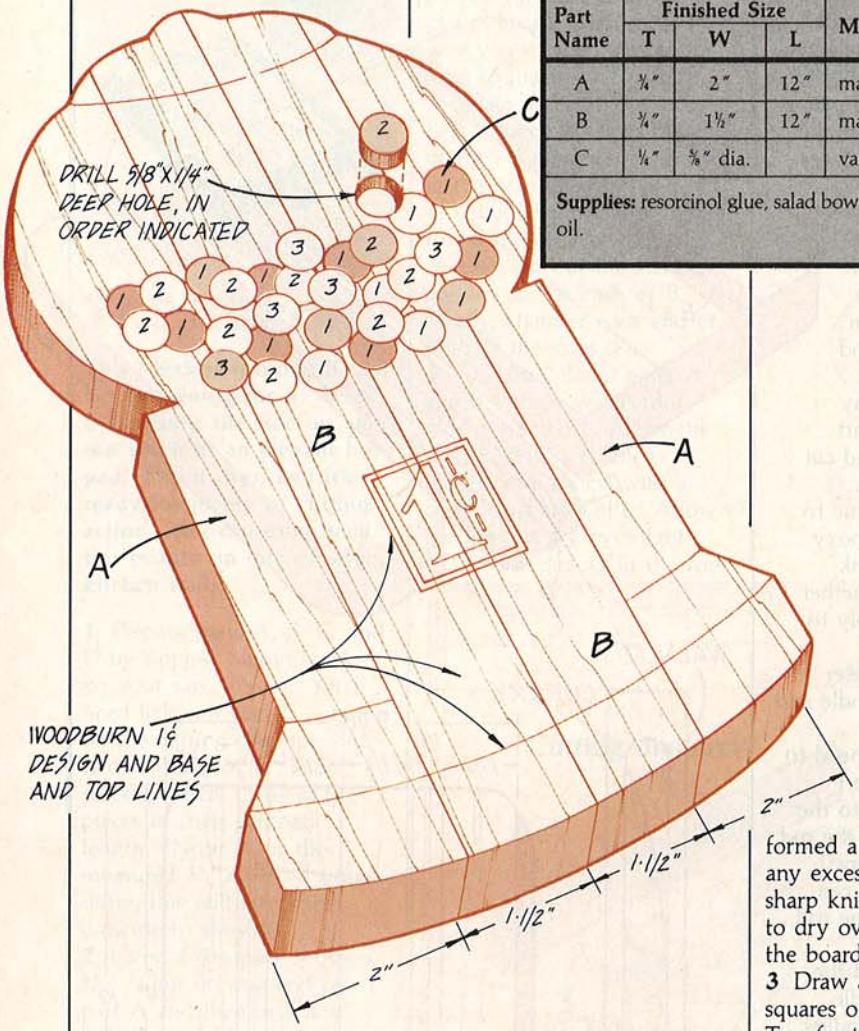
Part Name	Finished Size T	Finished Size W	Finished Size L	Material	No. of Pieces
A	1 1/16"	1 1/2"	9"	maple	4
B	1 1/16"	1/4"	9"	walnut	2
C	1 1/16"	1/4"	6"	walnut	2
D	1 1/16"	1/4"	4"	walnut	2
E	1 1/16"	1/16"	9"	cherry	1
F	1 1/16"	1/16"	6"	cherry	1
G	1 1/16"	1/16"	4"	cherry	1

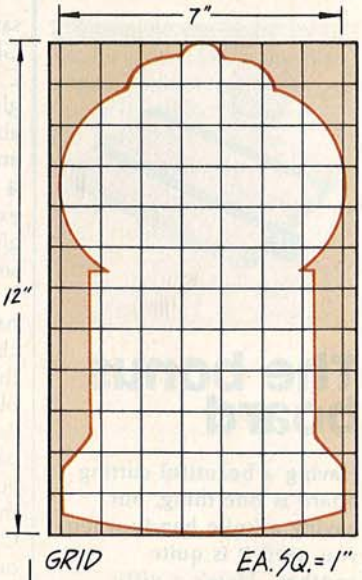
Supplies: Knife blade (about 5" long × about 3/8" wide), 2 pcs.—1/4"×3/4" brass rod, resorcinol glue, epoxy adhesive, salad bowl finish or mineral oil.

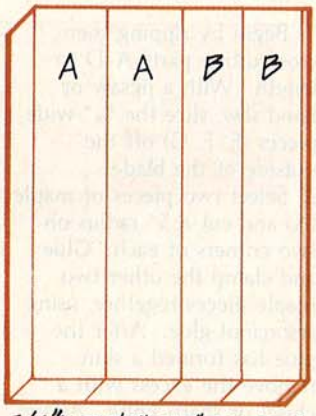
Continued

Bill of Materials					
Part Name	Finished Size			Material	No. of Pieces
	T	W	L		
A	¾"	2"	12"	maple	2
B	¾"	1½"	12"	maple	2
C	¼"	⅝" dia.		various	31

Supplies: resorcinol glue, salad bowl finish or mineral oil.







The gum-ball machine

Of the six cutting boards we feature in this story, this fanciful one gets more reaction than any of the others. You're sure to have everyone asking how you got all those gum balls in there.

1 Start this project by ripping pieces A and B and crosscutting them to length (see the bill of materials). Make sure your saw is properly aligned and that the blade you're using is sharp.

2 Arrange the boards according to the plan and alternate the direction of the end grain. When joining stock, alternating end grain greatly reduces the chances of warping.

Next, glue and clamp the maple strips together, using waterproof glue (resorcinol). After the glue has set up and formed a tough skin, remove any excess with a chisel or sharp knife. Allow the glue to dry overnight, then sand the board smooth.

3 Draw a grid of one-inch squares on a sheet of paper. Transfer the pattern from the plans to this grid, then transfer this pattern onto the board with tracing paper.

Using a band saw or jigsaw, cut the outside contour of the board. Sand the edges smooth.

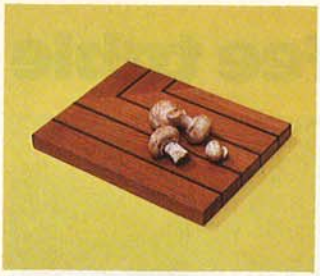
4 Locate the centers of the gum balls on the board. Refer to the plans and mark each gum ball with a 1, 2, or 3. Gum balls that appear to be under other gum balls are drilled first.

If you're planning on producing more than one of these boards, make a template out of ⅛" or ¼" hardboard and drill 1/16" holes to locate the centers of the gum balls.

5 Drill all the holes marked with a "1." Use a ⅝"-diameter drill bit (a Forstner or brad point is best) and make the holes ¼" deep.

Then, using a ⅝" plug cutter, cut plugs out of various hardwoods from your scrap bin. Glue these plugs into the series of holes you drilled and sand them flush after the glue has been allowed to dry. Repeat this entire process for the "2" and "3" holes.

6 Final-sand the entire project smooth and use a woodburner for the line decoration. Apply a nontoxic finish such as salad bowl finish or mineral oil.



The bent corner board

Want to add variety to a simple laminated cutting board . . . fast? Just try this easy technique. You'll love the comments from people who enjoy an unusual treatment of a commonplace item.

1 Prepare hardwood stock for this board by first ripping then crosscutting parts A and B to length, plus ½". We used cherry and walnut to provide an interesting contrast. Be sure to rip cut the ⅛" walnut pieces (B) on the outside of the blade, and use a push stick during all ripping operations.

2 Next, glue and clamp the stock, alternating the woods according to the plans. Alternate the grain direction of the cherry pieces to reduce warpage. When gluing, use a waterproof glue such as resorcinol. Allow the glue to set up until it forms a tough skin, then remove any excess glue with a chisel or sharp knife.

After the glue has been permitted to dry overnight, remove the clamps and sand the board smooth.

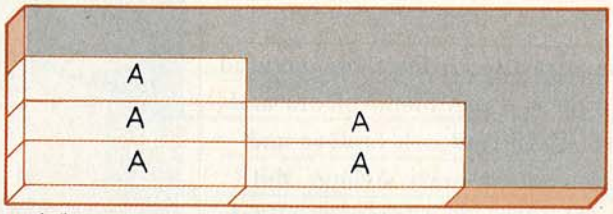
3 Square up the ends of the board with your saw. Before cutting the diagonal across the corner, you'll need to first attach a long 1×2 board to the miter gauge for additional support. Then, place the cutting board against this extension and make your cut across the corner of the board starting at the third walnut strip (see plan).

4 Flop the small triangular piece, and line up the walnut strips at a 90° angle. Check the fit. Glue and clamp the two pieces together, following the same gluing procedure as described in step 2. Sand the project smooth after the glue sets up.

5 The saw kerf reduced the dimensions of the triangle, so it's now necessary to even up one side and one end of the board. Rip the side of the board flush with the triangle, then crosscut the end of the board flush. Use a planer blade or hollow-ground blade. If you even up the edges on a jointer, make shallow (1/64") passes to avoid chip-out.

6 Sand the entire project smooth, then apply a nontoxic finish such as salad bowl finish or mineral oil. You may also use some penetrating oils, but these need to cure for about 30 days before they're rendered nontoxic.

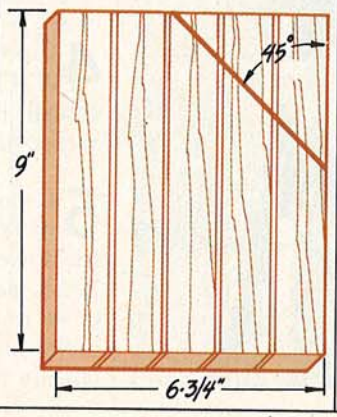
There are many variations of cutting boards possible with this technique. Experiment by using larger or smaller boards; varying the wood selection; or by cutting off and reapplying more than one corner. The possibilities are endless.

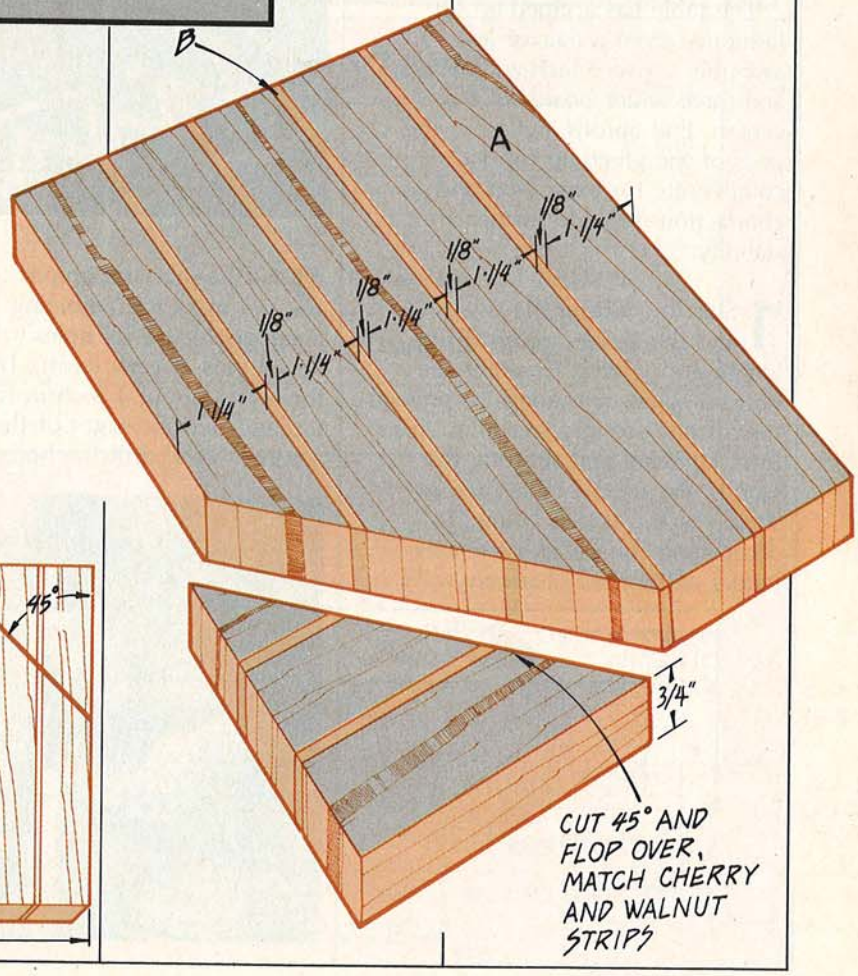


Bill of Materials

Part Name	Finished Size T	Finished Size W	Finished Size L	Material	No. of Pieces
A	¾"	1¼"	9"	cherry	5
B	¾"	⅛"	9"	walnut	4

Supplies: Resorcinol glue, salad bowl finish or mineral oil.





contemporary solid-oak coffee table

Print this article

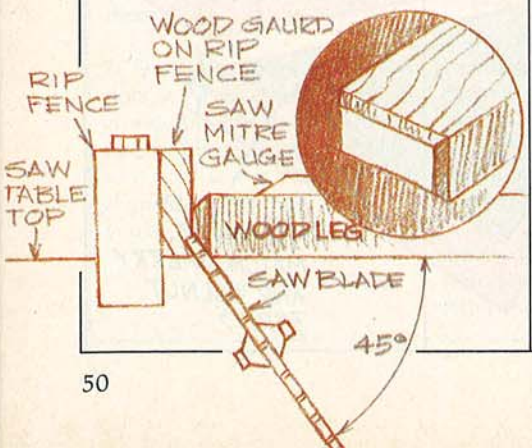
The attractive coffee table pictured at right is a rich blend of old and new—classic red oak lumber and crisp, contemporary styling. But don't let the good looks intimidate you. You can build this beauty in a couple of evenings at a fraction of the retail cost.

Designer: David Ashe Photographer: Al Elder

Don't overlook the possibility of rescaling the design and building a couple of matching end tables or even a sofa table.

The table has a glued-up top fashioned from a pair of leg assemblies, two 3-inch-wide leaves, and three wider boards in the center. End aprons, cut from the ends of the glued-up top to compensate for expansion and contraction, provide further stability.

1 Start by cutting the 4 legs (A) and the 2 side aprons (B) to length and width. Chamfer the bottom edges of the legs to prevent them from possibly snagging on a floor covering and splitting the wood. We used a table saw, as shown in the sketch below, to accomplish this. Make test cuts before cutting the chamfers.

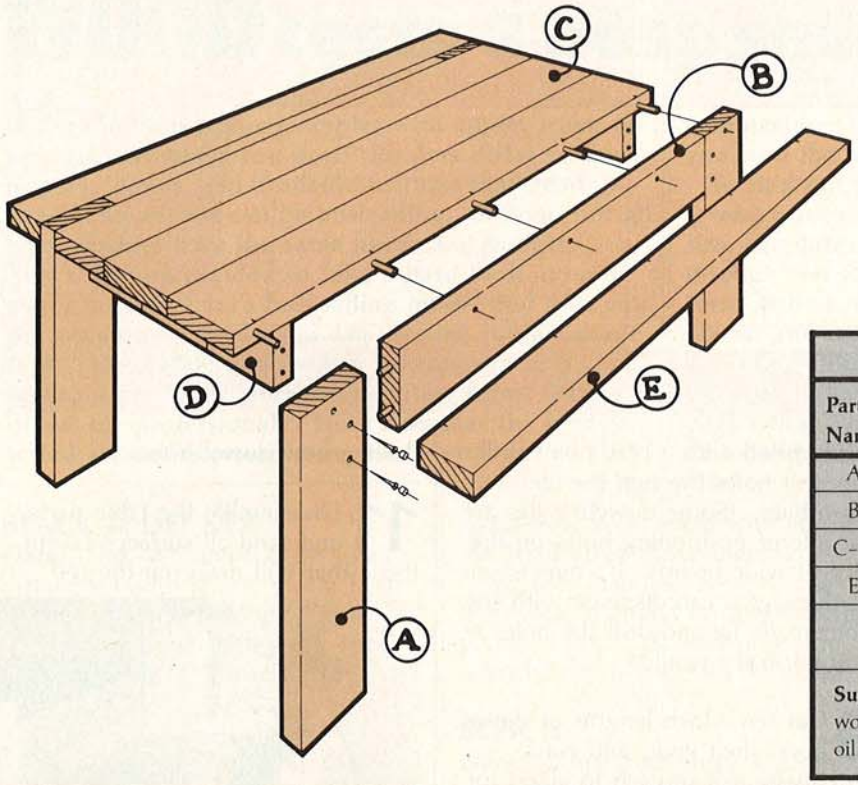


2 Fit the legs and aprons together and mark the adjoining members for dowel holes (use 2 dowel pins at each joint). Locate the marks about 1 inch in from the top and bottom edges of the aprons. Now, drill the holes for the dowel pins with a doweling jig, as shown here, or use a drill press or portable drill guide. (Make the holes slightly deeper than half the length of the dowel pins.

3 Glue and clamp the leg assemblies together. Remove excess glue after about 20 minutes. Allow the glue to set up overnight.

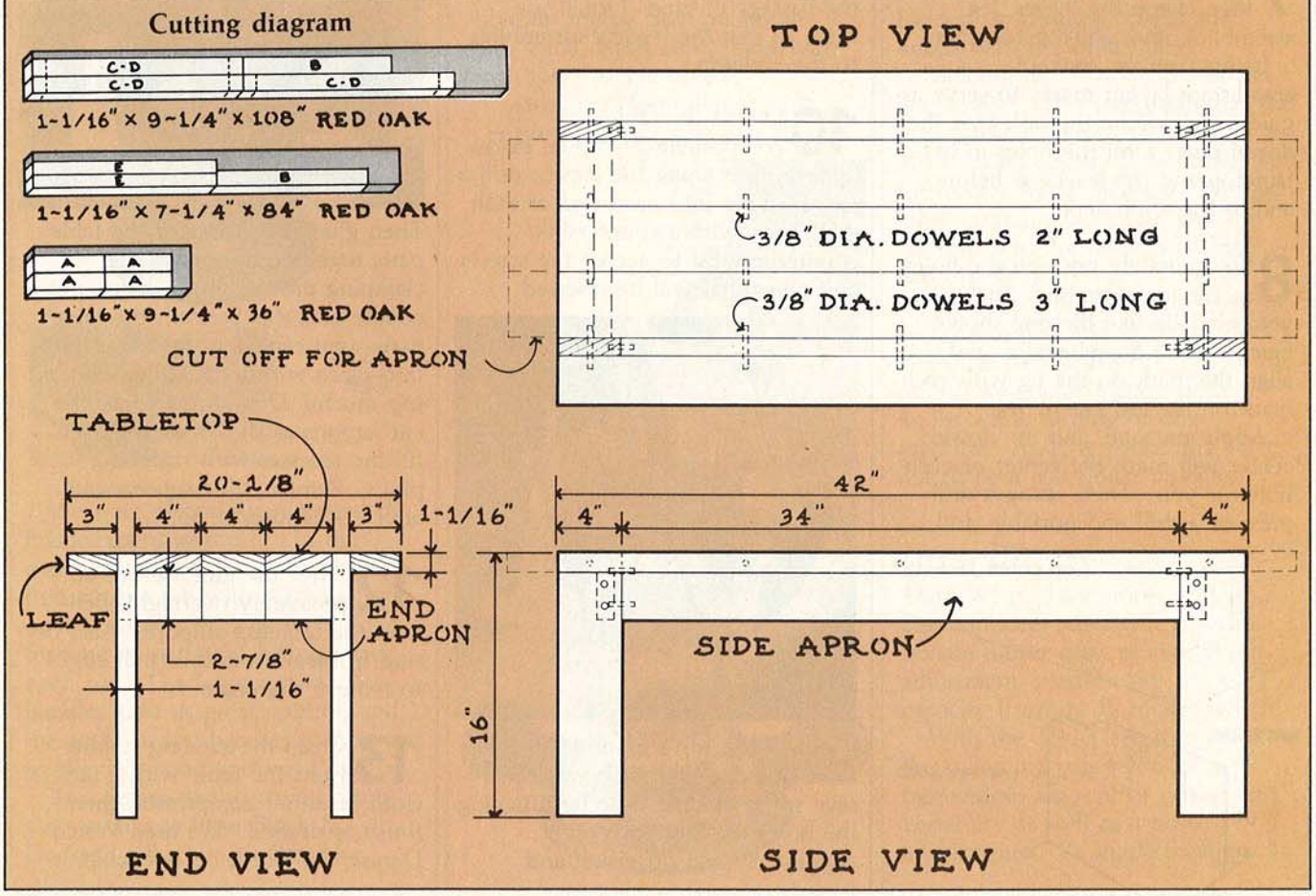
4 Cut the three tabletop pieces (C–D) to size. (These are long enough that you can cut the end aprons (D) from them later.)

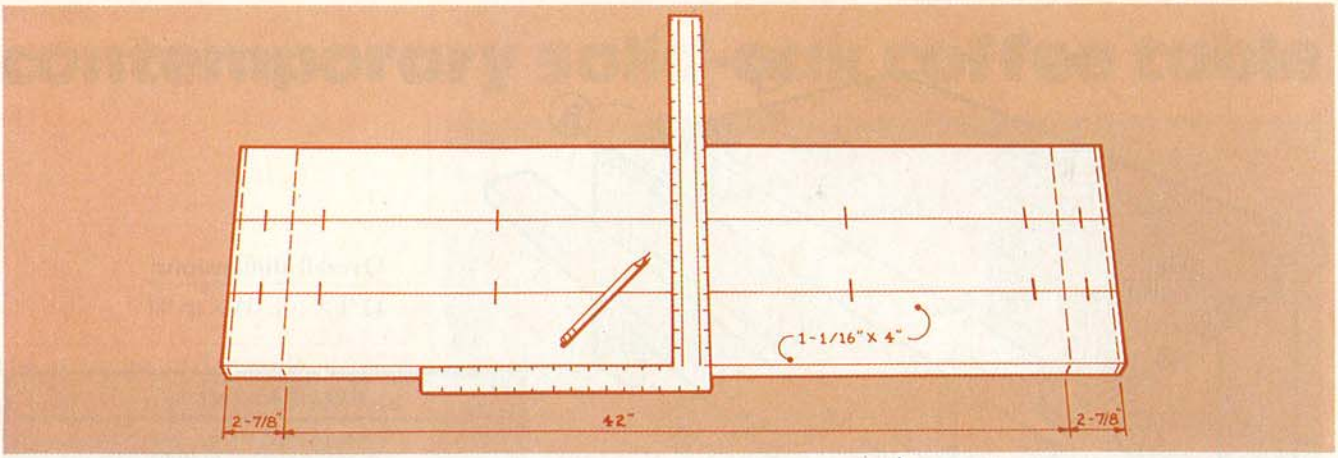
5 Using a square, make layout marks across the tabletop pieces for dowel holes to be drilled later. You'll want a dowel hole 1½ inches or so from each end of the finished table surface, 3 others spaced equally between these two, and 1



Overall dimensions:
42"L×20⅛"W×16"H

Bill of Materials					
Part Name	Finished Size			Material	No. of Pieces
	T	W	L		
A	1 1/16"	4"	16"	red oak	4
B	1 1/16"	2⅞"	34"	red oak	2
C-D	1 1/16"	4"	50"	red oak	3
E	1 1/16"	3"	42"	red oak	2
Tabletop (C) finished length = 42" End aprons (D) finished length = 2⅞"					
Supplies: ⅜×2" dowel pins, ⅜" dowel rod, woodworker's glue, 8—No. 10×2½" flathead wood screws, oil finish (or your choice)					





in the center of each end apron, as shown in the sketch on page *51*.

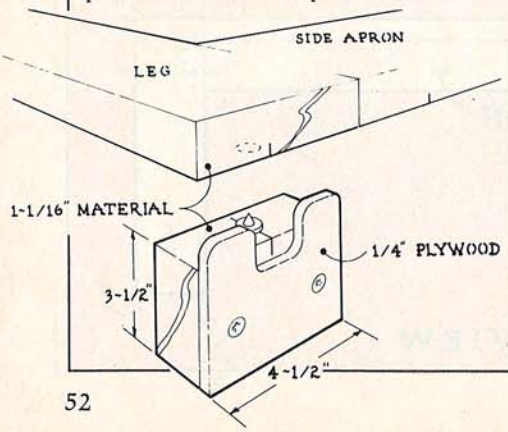
6 Drill the holes for the dowel pins as before, then glue and clamp the tabletop members together. After allowing the glue to set up overnight, cut the tabletop and the end aprons to the correct length. Set aside the end aprons.

7 Cut the table leaves (E) to size, then clamp the leaves, leg assemblies, and tabletop together.

Using a square, make 5 equidistant layout marks to serve as guides for drilling the holes for the dowel pins. Drill the holes in the tabletop and the leaves as before and to the same depth.

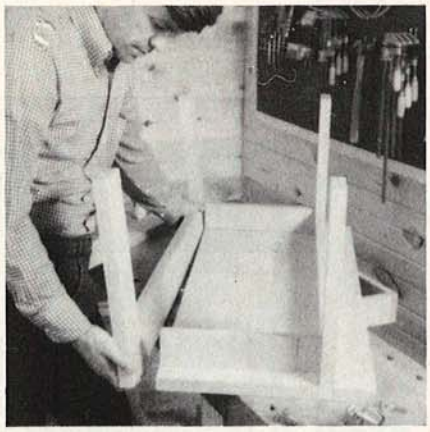
8 To accurately position the holes in the leg assemblies, make yourself a jig like the one shown here, insert a dowel center, and align the mark on the jig with each mark on the leg assemblies.

Apply pressure, and the dowel center will mark the center of each hole for you. Then, using a drill press or a drill and portable drill guide fitted with a brad-point drill bit, drill holes through the leg assemblies. (Some doweling jigs are capable of positioning holes on the face of wide boards. If yours is one of these, you can dispense with the homemade jig and drill the holes as you normally would.)

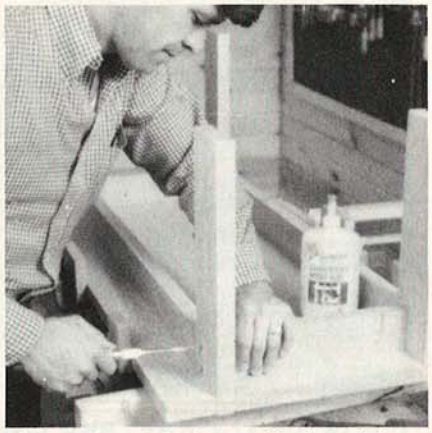


9 Cut ten 3-inch lengths of dowel, bevel their ends, and cut a lengthwise slot in each to allow for the passage of glue. (You'll use these to join the leg/leaf assemblies to the tabletop.)

10 Dry-fit the table's components as shown below. (Before positioning the leaves, drill a pair of holes into each end of each end apron with a countersink/counterbore bit to accept the screws and plugs that will be inserted later.) If the top surface of the table doesn't align well, you can save some sanding time by plugging the holes that are preventing alignment, then offsetting and drilling new dowel holes.



11 Disassemble the table parts, and sand all surfaces except those that will make up the top.



Then glue and clamp all the table's parts together. (To make the clamping process much easier, put a couple of 2×4s beneath the table's parts; you can then slip the clamps into place without fumbling around too much.) Drive screws into the end aprons as shown above, then fill the recesses with matching plugs. Remove glue squeeze-out after 20 minutes or so.

12 After the glue has set up, preferably overnight, belt-sand the tabletop smooth. Also be sure to break (round off) all edges to remove sharpness.

13 Clean the sanding residue from the table with a tack cloth or an air compressor, then finish as desired. We used Watco Danish Oil Finish on our table.

Print this article

WOOD tests 8 best-selling routers

How do you compare apples with apples when the product is routers? You don't! Routers differ so much in price, power, and available features that head-to-head comparisons can be misleading. Besides, not all woodworkers have the same needs and budget. That's why we decided to take a hard look at each major manufacturer's best-selling model and give you our opinion of it. As you can see, the routers range from $55 to $300 and from ¾ horsepower to 3 horsepower. Some were designed for home use; others for professionals. Note also that the models tested are not necessarily the best router each manufacturer makes. Keep these things in mind as you read the pros and cons of the eight machines.

To find out how each performed, we used them on several projects to make cuts appropriate to their size. We did, for the sake of uniformity, put them all through two tests that even the smallest should perform without difficulty. To check for vibration, power, and handling, we cut a 3"×5"×5/16"-deep dado in ash lumber with a ½" carbide-tipped straight bit. And to see how well each router handles on edge work, we cut several feet of ash with a ⅜" carbide-tipped round-over bit.

BLACK & DECKER

Data: 1 hp.; 8.5 amps; 9 lbs.; cast metal base with plastic motor housing; plastic cord; rack-and-pinion depth adjustment with pinch lock; trigger switch; ¼" capacity.

#7613
$55

We were pleasantly surprised by this inexpensive router. In our dado-cutting test the 7613 plowed through the ash with no vibration or noticeable loss of power. Edge-forming with the ⅜" bit was very easy, too. The large closed-loop handles gave us great control, and the angle of the handles was perfect to alleviate hand and wrist fatigue.

The design of this router represents a change from Black & Decker's old styling. Though completely compatible with all the old accessories, this router has closed-loop handles, a swing-arm shaft lock mounted on the bottom of the motor shaft, and only one wrench, which stores in the base.

BOSCH

Data: 1¾ hp.; 10.5 amps; 7.25 lbs.; cast metal base with glass-reinforced polyester motor case; neoprene cord; spiral depth adjustment with pinch lock; toggle switch; ¼"*, ⅜", ½"* capacity (*furnished).

A powerful machine in a small package, the 1604 has the greatest start-up torque of the routers we tested. The knobs are low on the base and large enough to give a good feeling of control when the machine is on the work. Because of the small diameter of this router, we found it easier to control by grasping the motor and base with one hand and either cutting one-handed or grasping one of the knobs with the other hand.

#1604
$185

Dadoing the 3"×5" hole in ash was a snap. This tool easily has the power to cut twice that deep without wincing. And edge-cutting with this router was a pleasure. We had good visibility of the bit and the cut line, and the router's balance was excellent.

Our only complaints concern the switch position and the pinch lock. With the switch near the top of the router, we couldn't grasp both knobs while turning on the machine. And we found the wing nut to be a real finger pincher.

HITACHI

Data: 3 hp.; 12.2 amps; 12.3 lbs.; cast and steel base with polycarbonate motor case; plunge depth adjustment; plastic cord; ¼", ⅜", ½" capacity (furnished); rocker switch.

With the TR-12 (see the photo on the following page) you get a tremendous amount of power and versatility as well as a host of attachments — a guide bushing, ¼

Continued

and ⅜ shank bushings, straight-edge guide with round-edge attachment, a roller bearing guide, 2 cast-metal wrenches, and a ½″ two-flute carbide bit.

The TR-12 cut the dado in the ash without a hint of hesitation. In fact, we were able to cut ¾″ deep without any problem. When we cut the ash with the round-over bit, though, we found that the large

TR-12
$299

opening in the base made controlling the router at the end of narrow pieces and near corners difficult.

One of the TR-12's most desirable features is its plunge-cutting ability. Instead of tipping the machine into a board, we simply placed the router firmly on the work, turned it on, and pushed down. The TR-12, like the Ryobi R-150 router (see facing page), has 3 preset depth stops so you can cut to different depths by swiveling the stop block.

The rocker switch was a little hard to reach, but we did manage to engage the motor without letting go of the handles. Since this machine has a good deal of starting torque, we would rather see a trigger switch engineered into the TR-12.

MAKITA

Data: ¾ hp.; 4.8 amps; 5 lbs.; glass-reinforced polycarbonate motor case and base with cast-metal motor/bearing support bottom cap; plastic cord; ring depth adjustment with pinch lock; trigger switch in handle; ¼″, ⅜″ capacity.

The 3608BK comes with its own case, 2 stamped steel wrenches, and both collets. It is small and lightweight, and the polycarbonate construction cuts dramatically the chances of breaking the case or base. This material also lets Makita mold the router in its unusual

#3608BK
$128

shape. The handles at the end of sloping stalks are comfortable to hold and give excellent control.

When cutting the 3″×5″ dado in ash, we encountered some vibration. The motor was working hard to plow through the material. On the other hand, the edge-routing duties were performed with great ease. Our ⅜″ bit easily fit in the hole in the base plate, but the hole was not so large that it created any problems with narrow pieces or in corners.

The 3608BK is a light-duty router and should be purchased with that in mind. If you plan on cutting a lot of deep dados or working in hardwoods, you may want to go with more horsepower. Makita has two other more powerful models to choose from.

MILWAUKEE

Data: 1½ hp.; 10 amps; 8.5 lbs.; cast base and motor case with glass-reinforced nylon handles and motor top/switch housing; rubber cord; ring depth adjustment with pinch lock; heavy-duty slide switch; ¼″ (furnished), ⅜″, ½″ capacity.

The 5660 is made for heavy

#5660
$245

industry and costs more as a reflection of the durability built into it. The collet system is the same as that used in large industrial routing machines. The glass-reinforced nylon parts are highly damage-resistant, even in cold temperatures. They are also unaffected by almost all solvents used today. The switch and cord, like the rest of the router, are extra heavy duty and designed to last a long time.

We found that the 5660 performed our tests with no noticeable power drain or vibration. The controls are large and easy to use, and the handles have been shaped for easy gripping and minimal hand fatigue.

When we edge-routed with the 5660, we found it very easy to control. The baseplate hole was plenty large for the ⅜″ bit and control on small pieces was excellent.

PORTER-CABLE

Data: ⅞ hp.; 6.5 amps; 7 lbs.; all cast metal construction; rubber cord; spiral depth adjustment with pinch lock; toggle switch on motor; ¼″ capacity.

#100
$124

Porter-Cable has made the 100 for over 30 years. It is extremely durable with high-quality parts all around. This quality is evident when you turn it on. The motor runs smoothly and, with the power off, coasts to a slow stop on excellent bearings.

The placement of the handles low on the base allows for good control, but the knobs themselves are too small to get a good grip. On the other hand, considering the size and shape of the 100, the machine is easiest to use if you grip the motor housing with one hand.

Despite its ⅞-horsepower rating, the 100 cut the 3″×5″ dado in ash without vibration or noticeable power drag. Edge-routing did present one major problem, though. The hole in the base plate that is designed to hold guide bushings common to all Porter-Cable routers was too small for the ⅜″ round-over bit. The Porter-Cable spokesman said this is a problem they are considering, but the only answer for now is to get another base and cut the hole larger and save one for the bushings.

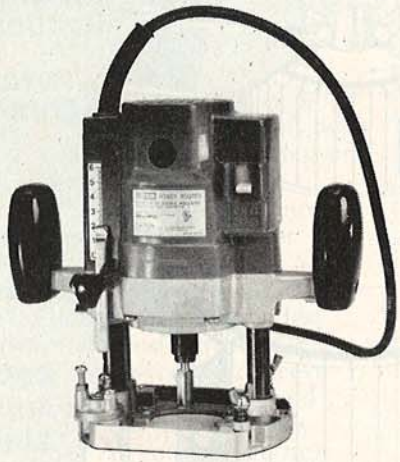
The screw-in type spiral depth adjustment was smooth and allowed for accurately making adjustments. We did notice, though, that every time we changed depth, the toggle switch was in a different position. Sometimes, it was awkward to turn the machine on and off.

This is an excellent trimming machine, but like the Makita, it is underpowered if you plan to do a lot of dado work.

RYOBI

Data: 1 hp.; 6.5 amps; 5.9 lbs.; cast metal base with steel posts and polycarbonate case; rubber cord; plunge adjustment; toggle switch, ¼″ capacity.

#R-150
$120



This import has a good feel and cuts well for a 1-horsepower router. The plunge feature is excellent and designed to perform well. The motor slides smoothly on its support posts, and the lock is easy to set.

This router comes with cast-metal wrenches, guide bushing, and large, quick-to-adjust straight and curved edge guides.

The R-150 stood our dado test well. The plunge feature made cutting the dado extremely easy and safe. The motor did not appear to be unduly strained, either.

Edge-cutting was a different story. Control and stability were very good along the length of pieces wider than 3″. But the large hole in the base made edge-routing on narrow pieces or in corners (especially on narrow pieces) difficult.

We also had some trouble with the slide switch. Twice, it did not shut off until we flicked it a couple of times. A much better option, we think, would be a trigger switch in one of the well-designed handles.

SEARS

Data: 1½ hp.; 8 amps; 9 lbs.; cast metal base with glass-reinforced thermoset polyester motor housing; ring-depth adjustment with pinch lock; plastic cord; trigger switch in handle; ¼″ capacity.

The 1749 had plenty of power for our dado cut through ash. But we did get vibration, which we feel came from the flexibility in the plastic housing. Edge-routing proved an easy chore.

#1749
$99.99

We like the built-in shaft lock on this router. Just slide it to its "lock" position, and the shaft stays put. This makes bit changing quite easy.

When working with the router, we noticed that the baseplate is not self-centering and that you have to remove this plate to attach the edge guide. Since we use guide bushings on many projects, attempting to center the baseplate on the bit each time is a nuisance.

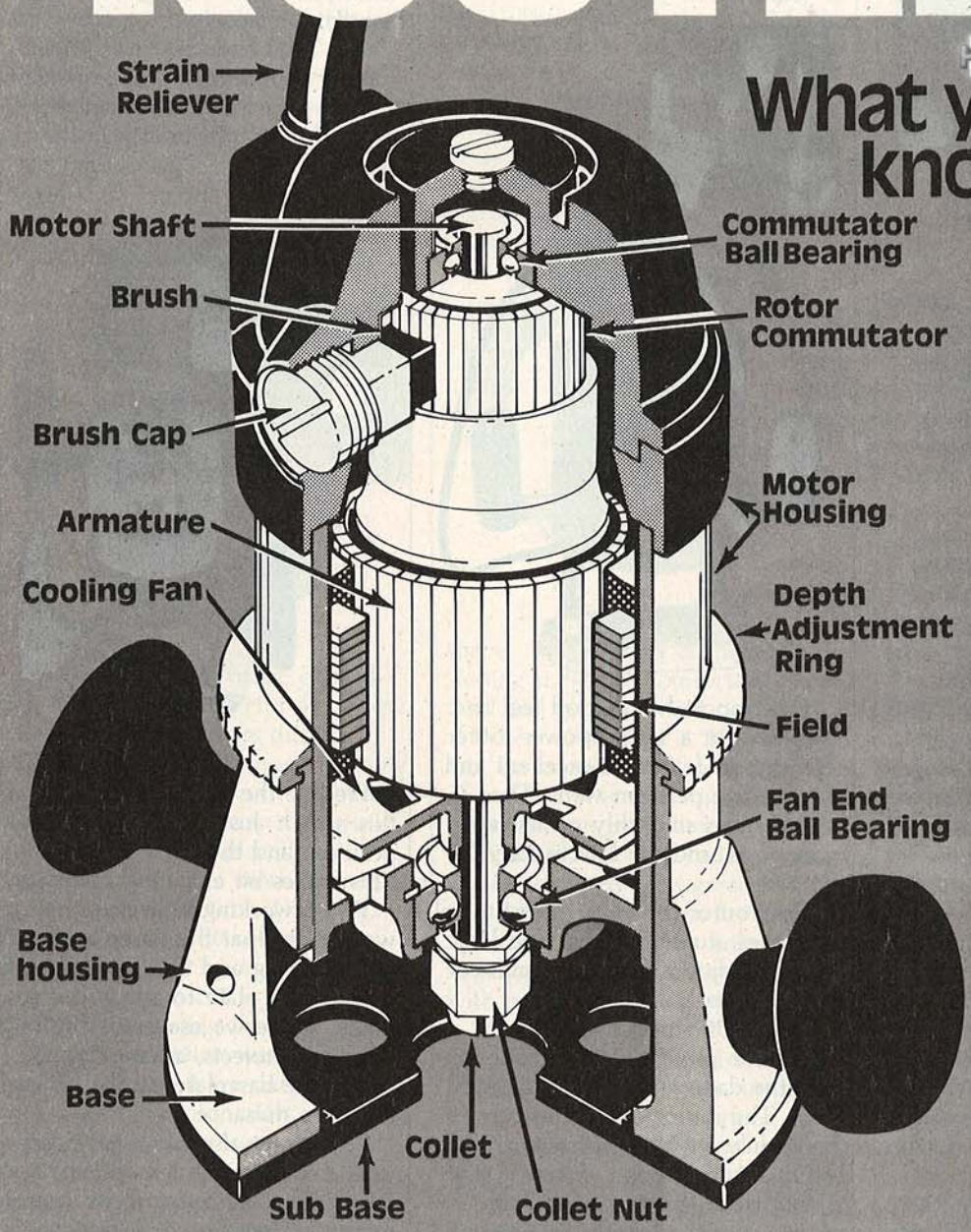
The router also has what Sears calls a colletless chuck system, which they say outperforms the old method. Basically, they drill a ¼″ hole in the end of the motor shaft. Then, they thread and split the shaft. Put a bit in the router, tighten the tapered nut, and it is locked solidly on the shaft. We wonder about the effects of shaft wear. If a bit loosens and wears on the shaft, the entire armature must be replaced. In most routers, only the collet would need replacement.

ROUTERS

Print this article

What you should know before you buy

By A. J. Hand



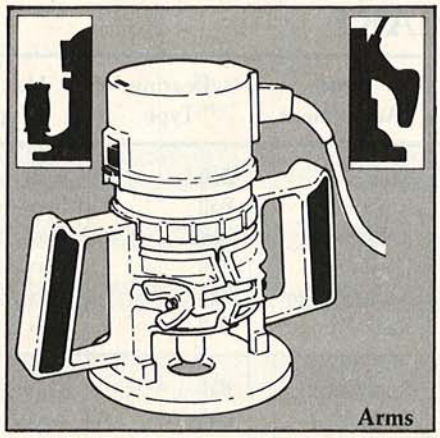
The cutaway sketch shown above gives you a good idea of what goes on inside today's generation of routers. Various buy-points are discussed at right.

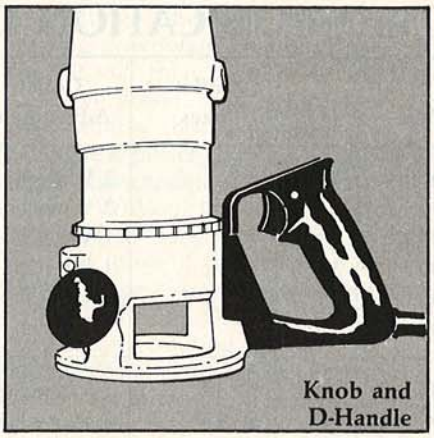
It's hard not to be impressed with a router's credentials. After all, with the right bits and accessories, it can cut intricate joints, make moldings, carve, make signs, rout fancy edges, cut curves, make bowls, turn wood, joint edges, and trim laminates. No other shop tool is as versatile or more fun to use.

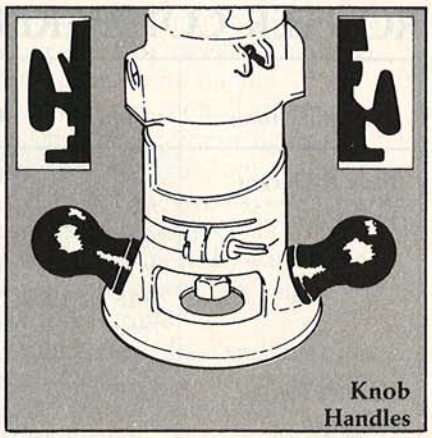
What isn't so fun is trying to decide which one to buy. There are just too many to choose from, each with a different blend of features, each at a different price.

The chart on page *58* lists most of the routers currently available in this country. If you're on a budget (and who isn't), you can eliminate some of them by simply setting an upper dollar limit. Keep in mind, though, that the prices shown are retail, and often you can find the product heavily discounted.

After paring down your choices somewhat, you can then focus your attention on selecting a router with features that best suit your requirements. The following information should help you do that.







Handle Configurations

HOW MUCH HORSEPOWER DO YOU NEED?

There is no substitute for power. Sure, a light-duty router can duplicate the work of a more powerful tool by taking two or more light cuts instead of one heavy one. But multiple cuts multiply your chances for error, and resetting the depth adjustment time after time is annoying.

Horsepower also determines how effective a router will be in maintaining operating RPMs. Any router you buy will have more than adequate rpms under no load, but an underpowered tool will slow down as soon as you feed it some work. As the tool slows down, cut quality drops off, the tool begins to strain, and its life expectancy drops.

For these reasons, **buy as much power as you can afford.** Unless you are *certain* you only want your router to perform light work on softwoods, *go for a minimum of one hp.* If you know you'll be making heavy cuts such as dadoes, cutting deep mortises and large tenons, or working extensively with hardwoods, I'd suggest selecting one with at least 1½ hp.

Buying power will also almost certainly assure you of higher quality throughout the tool. You'll certainly get all ball-bearing construction rather than the less expensive and less durable sleeve bearings. I've owned two sleeve-bearing routers in the past, and both burned out in a relatively short time. As you can see from the chart, most manufacturers have gone exclusively to ball bearings.

YOUR COLLET SIZE OPTIONS

Almost any conceivable routing job you'll encounter can be handled by a router with a ¼″ collet. But, if you plan to do lots of *exceptionally* heavy work, you might consider a tool with a collet big enough to take ⅜″ or even ½″ bits. Just make sure it will take ¼″ bits as well. A few routers won't.

OTHER BUY-POINTS TO CONSIDER

While cost, horsepower, and collet size are the big three considerations in selecting a router, you should also be familiar with the following:

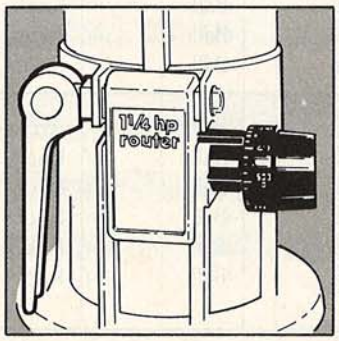
Collet Adjustment. Most routers require two wrenches for bit changes. One holds the motor shaft; the other turns the collet nut. Other routers have built-in shaft locks so you only need one wrench. That's one less wrench to handle, one less wrench to keep handy.

Depth Adjustment. All three major types (ring, rack and pinion, and spiral) work well. And almost all read out depth in the same 1/64″ intervals. But if you plan to use your router upside down in a router table, you might prefer rack-and-pinion depth adjustment. With many of the others, the router motor slips down in its base as soon as you loosen the locking clamp.

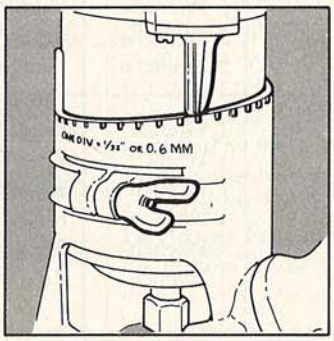
Plunge Routing Capability. Plunge routers are spring-loaded, with their bits retracted above the base until

Continued

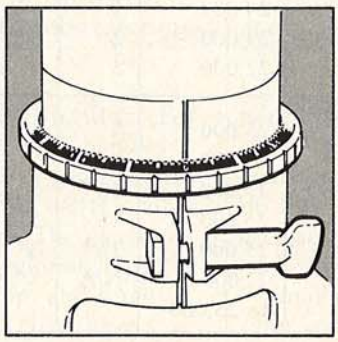
Depth Adjustment Mechanisms



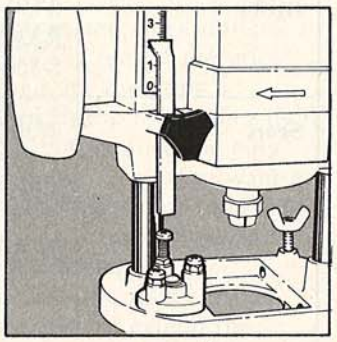
Rack and Pinion



Spiral Adjustment



Ring Adjustment



Plunge Adjustment

ROUTER COMPARISON/SPECIFICATION CHART

Manufacturer	Model	R.P.M.	H.P.	Collet Sizes	Collet Adjustment	Depth Adjustment	Bearing Type	Handle Type
Black & Decker *(Consumer)*	7600	30,000	5/8	1/4"	2 Wrenches	Ring	Ball	Two Arms
	7604	30,000	3/4	1/4"	2 Wrenches	Ring	Ball	Two Arms
	7613	25,000	1	1/4"	1 Wrench[A]	Rack	Ball	Two Arms
	7614	25,000	1 1/2	1/4"	1 Wrench[A]	Rack	Ball	Two Arms
	7615	25,000	1 1/2	1/4"	1 Wrench[A]	Rack/Plunge	Ball	Two Arms
	7666	25,000	1 1/2	1/4"	1 Wrench	Rack/Plunge[B]	Ball	Two Arms
Black & Decker *(Industrial)*	3310	25,000	1 1/2	1/4"	2 Wrenches	Rack	Ball	Knobs
	3335	18,000[F]	3 1/2	1/2, 3/8, 1/4"	2 Wrenches	Ring	Ball	Two Arms
Bosch	1601	25,500	1	1/4"	2 Wrenches	Spiral	Ball	Knobs
	1603	25,000	1 1/2	3/8, 1/4"	2 Wrenches	Spiral	Ball	D & Knob
	1602	25,000	1 1/2	3/8, 1/4"	2 Wrenches	Spiral	Ball	Knobs
	1604	25,000	1 3/4	1/2, 3/8, 1/4"	2 Wrenches	Spiral	Ball	Knobs
	1600	26,000	2 1/4	1/2, 3/8, 1/4"	2 Wrenches	Ring	Ball	D & Knobs
	90303	22,000	3 1/4	1/2, 3/4, 1/4"	2 Wrenches	Ring/Plunge	Ball	Arms
	90300	22,000	3 1/4	1/2, 1/8, 1/4"	2 Wrenches	Ring	Ball	Arms
Hitachi	TR-8	24,000	1	1/4"	2 Wrenches	Plunge	Ball	Knobs
	TR-12	22,000	3	1/2, 3/8, 1/4"	2 Wrenches	Plunge	Ball	Knobs
Makita	3608BK	23,000	3/4	3/8, 1/4"	2 Wrenches	Ring	Ball	Arms
	3601B	23,000	1 3/8	1/2, 3/8, 1/4"	2 Wrenches	Ring	Ball	D & Knob
	3600B	22,000	2	1/2, 3/8"	2 Wrenches	Plunge	Ball	Knobs
	3600BR[C]	22,000	2	1/2, 3/8"	2 Wrenches	Plunge	Ball	Knobs
Milwaukee	5620	23,000	1	3/8, 1/4"	2 Wrenches	Ring	Ball	Knobs
	5660	24,500	1 1/2	1/2, 3/8, 1/4"	2 Wrenches	Ring	Ball	Knobs
	5680	26,000	2	1/2, 3/8, 1/4"	2 Wrenches	Ring	Ball	Knobs
Porter-Cable	100	22,000	7/8	1/4"	2 Wrenches	Spiral	Ball	Knobs
	630	22,000	1	1/4"	2 Wrenches	Spiral	Ball	Knobs
	536	23,000	1 1/2	1/2, 3/8, 1/4"	2 Wrenches	Spiral	Ball	Knobs
	537	23,000	1 1/2	1/2, 3/8, 1/4"	2 Wrenches	Spiral	Ball	D & Knob
	690	22,000	1 1/2	1/2, 3/8, 1/4"	2 Wrenches	Spiral	Ball	Knobs
	691	22,000	1 1/2	1/2, 3/8, 1/4"	2 Wrenches	Spiral	Ball	D & Knob
	514	22,000	2 1/2	1/2, 3/8, 1/4"	2 Wrenches	Spiral	Ball	Knobs
Ryobi	R-150	24,000	1	1/4"	2 Wrenches	Plunge	Ball	Knobs
	R-330	24,000	2	1/2, 3/8, 1/4"	2 Wrenches	Ring	Ball	Arms
	R-500	22,000	3	1/2, 3/8, 1/4"	2 Wrenches	Plunge	Ball	Knobs
Sears	1730	25,000	5/8	1/4"	1 Wrench	Ring	Ball & Sleeve	Arms
	1755	25,000	1	1/4"	1 Wrench	Ring	Ball	Knobs
	1756	25,000	1 1/4	1/4"	1 Wrench	Ring	Ball	Knobs
	1743	25,000	1 1/2	1/4"	1 Wrench	Ring	Ball	Knobs
	1749	25,000	1 1/2[D]	1/4"	1 Wrench	Ring	Ball	Knobs
	1750	11,000 to 25,000	N/A	1/4"	1 Wrench	Ring	Ball	Knobs

Notes: A Wrench stores in router base. B Has electronic digital depth readouts. C Same as 3600B but has round base instead of rectangular base. D Has variable speeds to suit bit size and stock hardness. E Has "ramped" startup. Accelerates smoothly up to speed rather than starting with a jerk. F Has one electronically controlled speed. G Prices are approximate and may be heavily discounted, often 30 percent or more. Shop around for best prices.

Switch Type	Work-light?	Dust PU?	Approx. Price[G]
Slide	No	No	$40
Slide	No	No	$45
Trigger	No	No	$55
Trigger	Yes	No	$60
Trigger	Yes	No	$70
Trigger	Yes	No	$135
Toggle	No	No	$196
Toggle[E]	No	No	$458
Toggle	No	No	$129
Trigger	No	No	$185
Toggle	No	No	$175
Toggle	No	No	$185
Trigger	No	No	$360
Trigger	No	No	$650
Trigger	No	No	$600
Rocker	No	No	$196
Rocker	No	No	$299
Trigger	No	No	$128
Trigger	No	No	$196
Toggle	No	No	$299
Toggle	No	No	$285
Slide	No	No	$235
Slide	No	No	$245
Slide	No	No	$299
Toggle	No	No	$124
Toggle	No	No	$135
Toggle	No	No	$295
Trigger	No	No	$310
Toggle	No	No	$179
Toggle	No	No	$210
Toggle	No	No	$435
Toggle	No	No	$120
Slide	No	No	$220
Toggle	No	No	$265
Slide	No	No	$40
Slide	No	No	$80
Trigger	Yes	No	$85
Trigger	Yes	Yes	$110
Trigger	Yes	Yes	$100
Trigger[E]	Yes	No	$150

you "plunge" the router down by pressing downward on the grips. The bit will then drop to the depth you have preset. For certain cuts, most notably those in the field of your stock rather than along the edges, this capability comes in very handy. Without the plunge feature, you have to start your router in the air, then lower it down to the work.

Switch Type. A trigger switch is probably the most convenient for conventional routing for two reasons. First, you can squeeze it while maintaining two-hand control of the tool. And second, it shuts off automatically when you release it. On the minus side? You can accidentally squeeze the trigger when you pick up the tool. Not only that, but triggers also are hard to get at if you fasten your router to a router table. In addition, most trigger-switch routers have non-removable bases. This rules out freehand carving as well as the use of just the router motor.

Toggle, rocker, and slide-type switches can be almost as convenient as triggers, provided they are located where you can reach them with both hands on the router grips. They are also better than triggers for router table work, and they usually allow you to remove the router base if necessary.

Drawbacks? Some of these switches are poorly located. All can be accidentally left on, or knocked on when the router is unplugged.

Handle Type. Most routers come with a pair of handles, usually knobs. But others have two vertical armlike grips, or a pair of D-shaped handles, or a combination of D-handles and knobs.

Which type is best? It's a matter of preference, but my experience is that small spherical knobs can cause cramps in your hands. For that reason I prefer a huskier grip such as arms or a pair of D-handles. For freehand work, I like the handles low on the router so I can rest my arms on the work for better control.

Electronic Features. The electronic revolution is just beginning to work its way into the shop, and three routers listed in the chart have special electronic features. Black & Decker's 7666 plunge router has a digital depth-of-cut display, and their big 3335 router gives you a choice of two speeds. The Sears Craftsman Electronic has electronically controlled variable speeds, plus indicator lights that help you feed the tool at the proper speed. If you have experience with routers, you can probably sense the proper feed speed by ear and feel, but the indicators can help if you are just learning.

Variable Speeds. I've found them useful, especially for making slow, finish cuts in hardwoods.

Dust Pickup. These work fairly well on some cuts, and not so well on others. My feeling is that if I have to sweep up *any* chips, I might as well sweep them all and be free of the clumsy vacuum hose.

Worklights. These can be helpful if properly located in the router. Try before you buy.

THINGS TO CHECK OUT AS YOU SHOP

Chances are you won't actually *use* the tool before you buy it, but you can learn a lot about it while at the store. Try changing bits. Is it easy to get your wrench on the collet nut or does the base interfere? Does the collet let go of the bit with a single turn of the wrench, or does it take two or three bites? Does the router have a flat top so you can stand it on its head for bit changes?

Check the switch? Is it easy to reach with your hands on the grips or will you have to let go of the tool to shut it down?

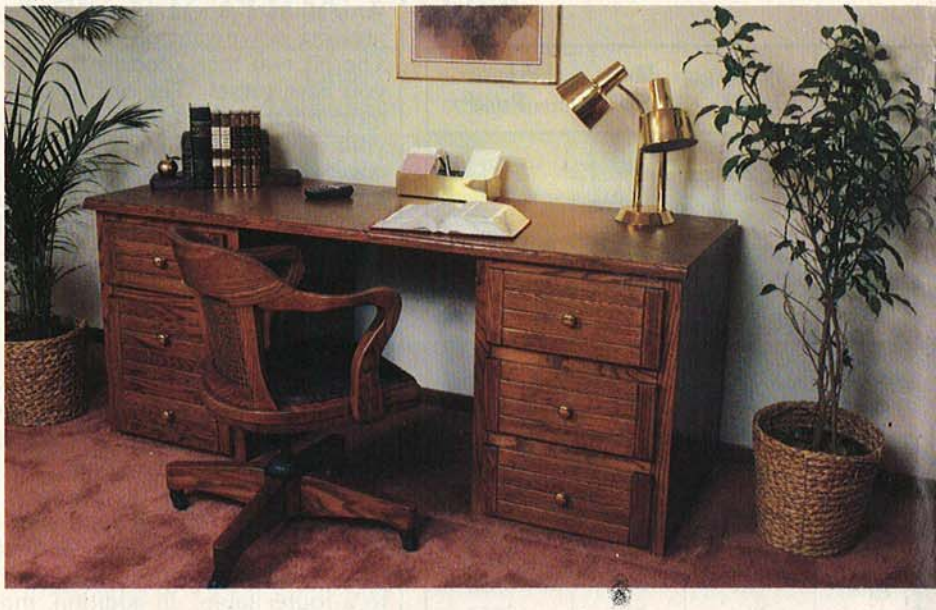
How is your view of the bit? Can you see where it is and where it is going? Check the power cord. Is it stiff and heavy? If so, it can drag and make freehand work difficult. Do you like the feel of the grips? Can you remove the grips if necessary to fit the router into tight spots? Can you remove the base from the router? (You may want to do this to use the motor in certain accessories, or to use it freehand for power woodcarving.)

Finally, does the router maker offer accessories to extend the usefulness of the tool and help it live up to its potential as the most versatile tool in your shop?

Print this article

Project Showcase

There's a lot of quality woodworking being done these days, and we'd like to show it off. In each issue of *WOOD,* we'll devote this space to a display of projects submitted by our readers—the ones shown here are the work of staff, friends, and acquaintances. To send in your projects, see the instructions at the end of the article.



A

A. Home Office Desk

Some thoughtful detailing vaults this desk above the ordinary. Larry Clayton, of Waukee, Iowa, built two red oak base cabinets, then fashioned the door and drawer fronts by edge-joining 1¾"-wide oak strips rounded-over on all front edges. He covered the 1³⁄₁₆" particleboard top with plastic laminate, then faced its front edge with oak molding.

B

C

B. Bent Wood Globe Stand

For this modern adaptation of a classic method, David Jordan, of Des Moines, Iowa, laminated ¼" oak strips with a contrasting center of walnut veneer to form the arms and legs. Soaking them in hot water, then bending and drying them on a form enabled him to achieve the graceful lines. Solid oak "gores" fitted to the triangular spaces between arms and legs add body and strength. The rim circling the globe was bent in the same manner.

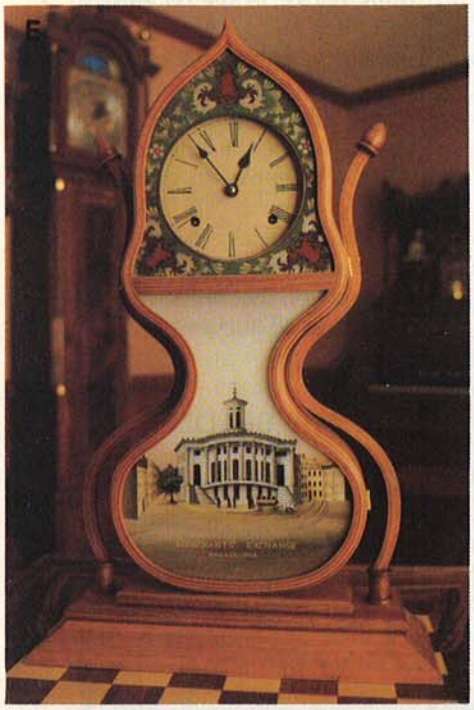
C. Pedestal Dining Table

When Bob Hawks, of Tulsa, Oklahoma, couldn't buy a table to his liking, he built one. His solid black walnut table extends with two leaves to seat eight people and was assembled without screws. The dowel-joined pedestal is built from 2" stock. The top of ⁄₄ stock was biscuit-splined together, then planed to 1⅛" thickness and banded with a solid strip of walnut. For a finish, Bob applied four coats of tung oil, then added four coats of wipe-on tung oil varnish.

D

D. Ornamental Parquet Table

Rosewood and black walnut in blocks of ¾"×2¼"×7⅞" form the pattern for this easier-than-it-looks coffee table. Lee Gatzke, Des Moines, Iowa, glued the blocks directly to ½" plywood underlayment set on ledger strips within the



mitered frame. The rosewood-veneered oak legs are rabbeted at the top to accept the frame. Lee used a penetrating oil finish.

E. 1800s Mantel Clock Replica
Originals of this circa 1850 J. C. Brown clock number a dozen, all of which reside in museums around the nation. Working from a brochure photograph, Bill Hopkins, of Des Moines, Iowa, figured out the technique to build one. The case is made of seven 1/16"×2"×62" strips of mahogany and cherry laminated together, then formed in a two-piece plywood mold pulled together by clamps. To accept the reverse painted glass front, the case was routed. The finish is several coats of satin varnish, sanded between coats with progressions of 250- to 600-grit wet/dry paper.

F. Onlaid Box Creations
Gumwood, ebony, holly, avodire, and bubinga are some of the 30 to 40 types of exotic wood veneers used by Alan Hoyt, Washington, D.C., in his eye-catching boxes. Onlaying veneers one at a time requires beveling each edge with a fret saw, then fitting the piece in place until the lid design is completed. A rabbeted hardwood frame surrounds the onlay and acts as a lid. The boxes shown range in size from 20"×15" to 6¾"×4½". A 60/40 blend of tung oil and varnish finishes his boxes.

G. Historic Chess Pieces
At a glance you'll recognize the faces of Custer, Sitting Bull, and Crazy Horse in this handcarved butternut chess set. James Kent Melton, Springfield, Missouri, does extensive research, then makes clay models of each piece before carving. Detail and accuracy mark his work. All pieces are 2" in diameter, and the "kings" stand 4½" high. For color contrast, he stained the wood lightly with thinned oil paint.

To Submit Your Projects: Send a 35-mm color slide, with the project as the focal point in a simple background. No people, please! Include a capsule description — materials used, special joinery techniques, finish, etc. *WOOD* will pay $25 for published projects. Unless otherwise requested, we will keep the slides.

Send to:
Project Showcase
Better Homes and Gardens®
***WOOD* Magazine**
Locust at 17th
Des Moines, IA 50336

marking gauge

*Collector's Edition

Print this article

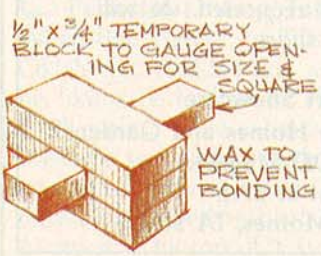
Design: Jim Downing
Photograph: George Ceolla

This brass-bound creation will be a proud part of your tool collection for years to come.

THE BODY

1 Resaw the walnut ½" thick. Then, rip a ¼"-wide piece (E) and another piece 1" wide. Cut pieces A and B to size.

2 Rip a 6" length of ¾" scrap lumber ½" wide. (Give it a coat of wax so it won't bond to the body parts during glue up.) Using woodworker's glue, assemble the body as shown here. Clamp the piece to ensure a good bond. Let the glue dry for several hours or overnight. Remove the spacer block after the glue is dry.

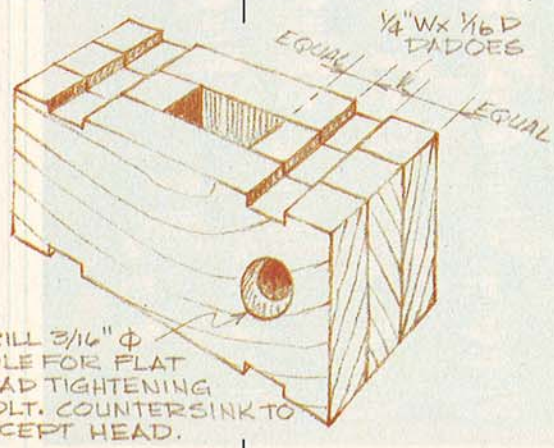


3 With a router, or a table saw fitted with a dado blade, cut ¼"-wide × 1/16"-deep dadoes in the body as shown to accommodate the brass plates (C).

4 Drill and countersink a 3/16"-diameter hole through the body to accept the tightening bolt. Refer to the plan view drawings for positioning.

5 Now cut a slot through the end of the body as shown in the plan drawing. We used a table saw equipped with a thin-rimmed blade.

6 Cut the brass stock (C) to size. Then cut two of the pieces in half. Fit the brass into the dadoes, and drill and countersink holes for the mounting screws. Install the brass, using epoxy in the dadoes and pilot holes. Also install the tightening bolt, using epoxy in the countersink to prevent movement of the bolt. Allow the epoxy to dry.

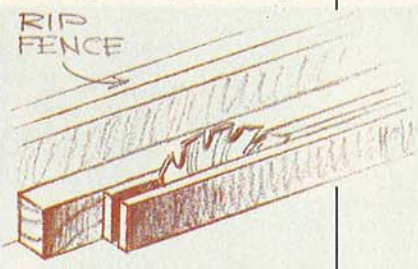


7 File away any excess brass protruding from the ends of the dadoes, then sand all surfaces until smooth.

THE BLADE

1 Resaw the maple ½" thick. Then, rip and crosscut two D pieces to size. Also crosscut E to length.

2 Glue and clamp the walnut strip to one of the maple strips, holding the walnut back about 1" from the end of the maple to create a slot for the lead/scribe holder. After the glue dries, rip the walnut to 1/32" wide, as shown. Then, glue and clamp the remaining maple strip to the glued-up blade assembly. Let glue dry.



3 Sand the blade as necessary so it will pass through the opening in the body. Then drill and countersink the hole that will accept the blade-tightening bolt. (Refer to the plan view drawings for exact hole location.) Now, using epoxy adhesive in the countersink, install the bolt. Thread the knurled nut onto the bolt to apply

some pressure, but not so much that the slot is reduced to less than 1/32". Then drill a 1/16" hole into the blade to accept a lead or scribe.

4 Cut 1/16"-deep×3/4"-wide rabbets in the opposite end of the blade to accept the brass plates (F). Cut the plates to size, then epoxy them into place. After the epoxy dries, file the brass smooth and sand all surfaces of the blade.

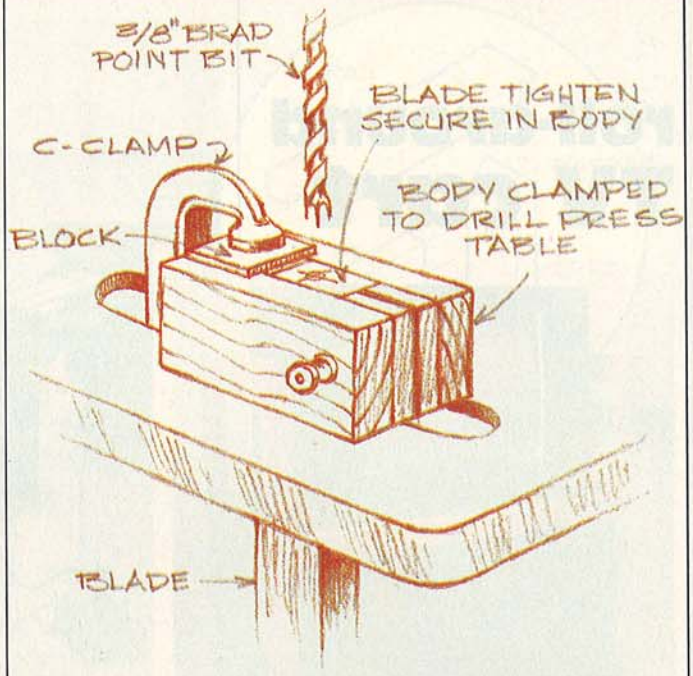
LEAD/SCRIBE STORAGE

1 Mark the center of the blade's end, then fit it into the opening in the body. If you have a drill press, clamp the body to the table as shown. (Make sure you have the tightening bolt snugged up so the blade won't move.)

2 Slowly bore a 3/8" hole 3/4" deep in the end of the blade, and a 3/16" hole in the center of that hole, 1/4" deep.

3 Size the remaining brass bolt (with head removed) so it will reach the bottom of the 3/16" hole and accommodate the knurled nut. Epoxy it into place.

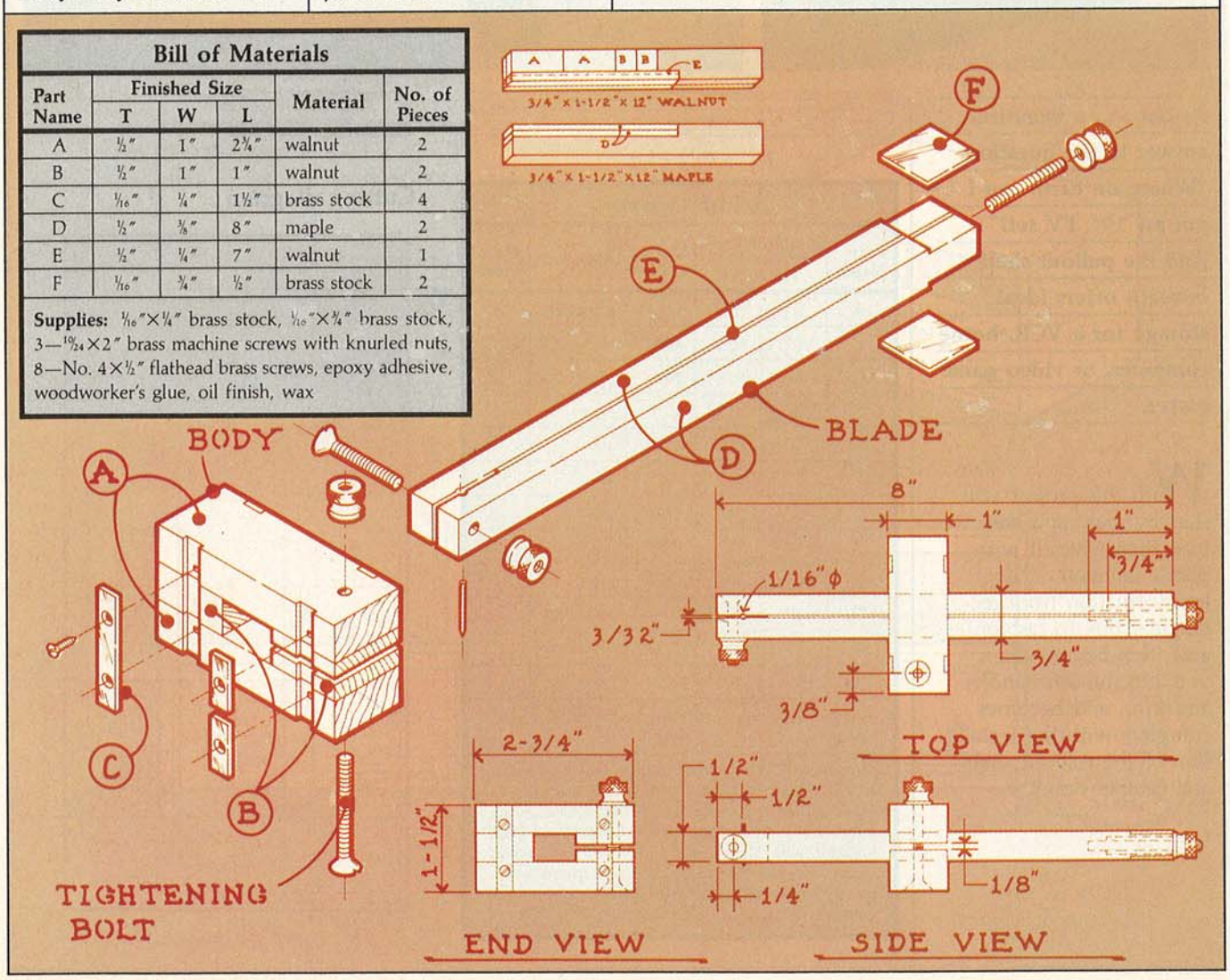
Note: *We used Watco Danish oil finish (natural) on our marking gauge. And after that dried, we applied a couple coats of paste wax.*



Bill of Materials

Part Name	Finished Size T	Finished Size W	Finished Size L	Material	No. of Pieces
A	1/2"	1"	2 3/4"	walnut	2
B	1/2"	1"	1"	walnut	2
C	1/16"	1/4"	1 1/2"	brass stock	4
D	1/2"	3/8"	8"	maple	2
E	1/2"	1/4"	7"	walnut	1
F	1/16"	3/4"	1/2"	brass stock	2

Supplies: 1/16"×1/4" brass stock, 1/16"×3/4" brass stock, 3—10/24×2" brass machine screws with knurled nuts, 8—No. 4×1/2" flathead brass screws, epoxy adhesive, woodworker's glue, oil finish, wax



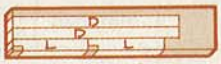
Print this article

roll-around TV cart

At last . . . a beautiful answer to the question, "Where on earth can I put my 19" TV set?" And the pullout shelf beneath offers ideal storage for a VCR, home computer, or video game player.

With this project you start by making a basic box, then cover it with plastic laminate. The transformation from rectangular box to fashionable item begins when you add the ash handles and trim, and becomes complete with the installation of the roll-out shelf and cabinet doors.

¾" × 7¼" × 84" ASH



¾" × 7¼" × 36" ANY SPECIES

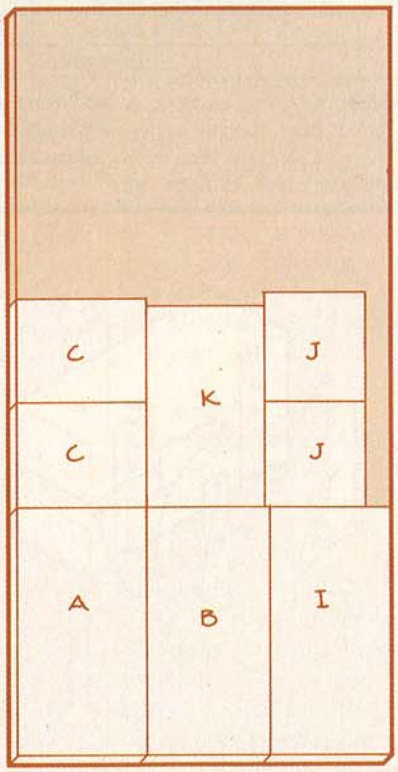
Bill of Materials

Part Name	Finished Size T	Finished Size W	Finished Size L	Material	No of Pieces
A	¾"	16½"	32 1/16"	plywood	1
B	¾"	16½"	30½"	plywood	1
C	¾"	16½"	14¼"	plywood	2
D	¾"	2"	30½"	pine	2
E	¾"	2"	27"	ash	4
F	¾"	2"	18"	ash	2
G	¾"	2⅛"	17¼"	ash	2
H	¾"	2"	28"	ash	2
I	¾"	13"	28"	plywood	1
*J	¾"	13⅞"	12 15/16"	plywood	2
K	¾"	16"	24¾"	plywood	1
L	¾"	3"	13½"	pine	2

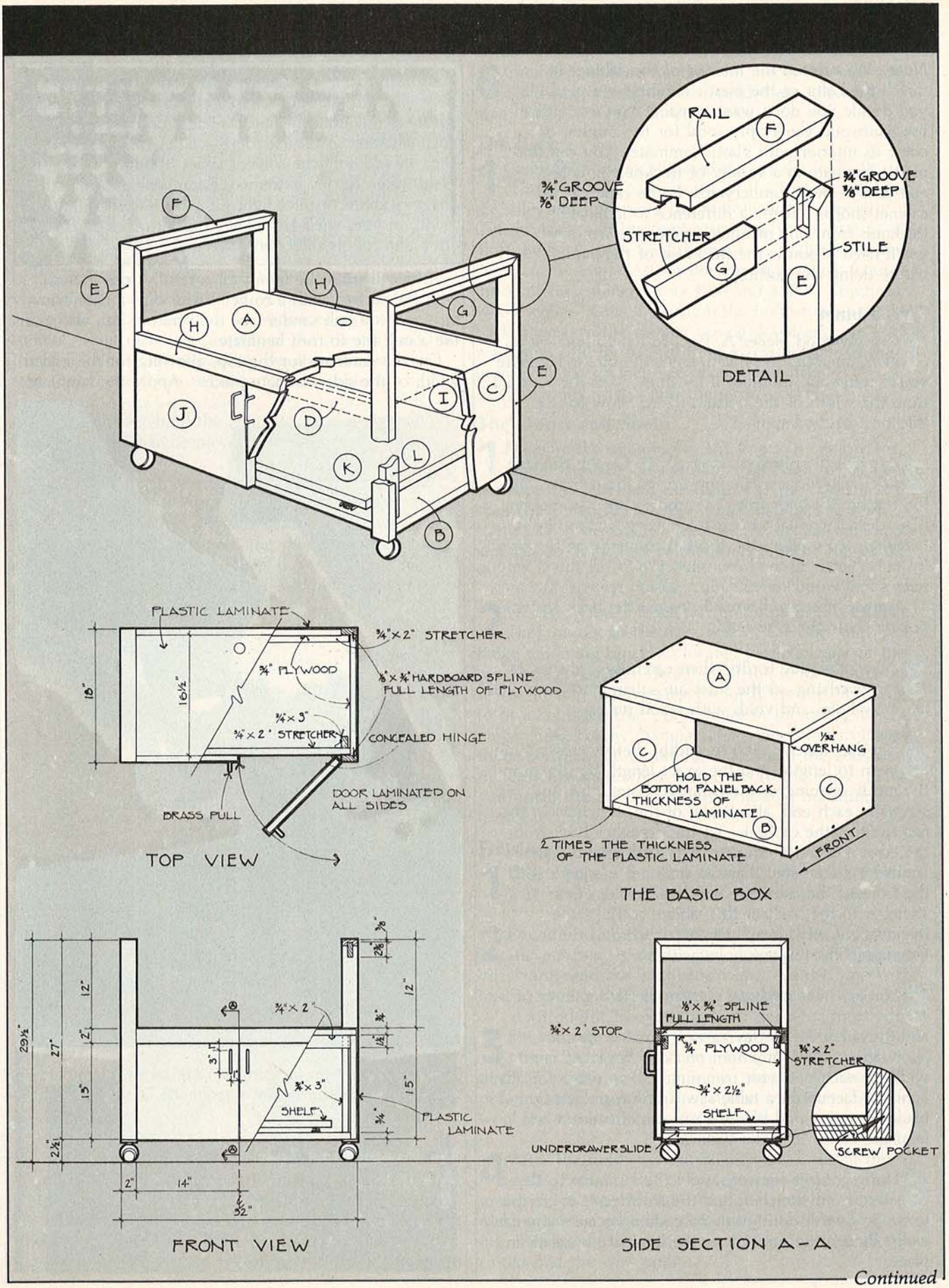
*Length and width include thickness of plastic laminate.

Supplies: ⅛" hardboard cut into 11/16"-wide strips, 3'×8' sheet of plastic laminate, 2 pair—Grass 1002 self-closing hinges and 1000-80 base plates, 1 set—2½" plate casters, 1 pair—Knape Vogt 1500 underdrawer slides, #8×1¼" flathead wood screws, woodworker's glue, contact cement, wood putty, 1 pair—3" brass wire pulls, polyurethane varnish, paint.

Cutting diagram



¾" × 48" × 96" PLYWOOD


RAIL
F
3/4" GROOVE
3/8" DEEP
3/4" GROOVE
3/8" DEEP
STRETCHER
G
STILE
E
DETAIL
F
E
H
A
H
G
E
C
I
J
D
K
L
B
PLASTIC LAMINATE
3/4" × 2" STRETCHER
3/4" PLYWOOD
1/8" × 3/4" HARDBOARD SPLINE
FULL LENGTH OF PLYWOOD
18"
16 1/2"
3/4" × 3"
3/4" × 2" STRETCHER
CONCEALED HINGE
DOOR LAMINATED ON
ALL SIDES
BRASS PULL
TOP VIEW
A
1/32"
OVERHANG
C
C
HOLD THE
BOTTOM PANEL BACK
1 THICKNESS OF
LAMINATE
B
2 TIMES THE THICKNESS
OF THE PLASTIC LAMINATE
FRONT
THE BASIC BOX
29 1/2"
27"
12"
12"
2"
15"
2 1/2"
3/8"
2 1/8"
12"
3/4"
1 1/2"
15"
3/4"
3"
1"
3/4" × 2"
3/4" × 3"
SHELF
PLASTIC
LAMINATE
2"
14"
32"
FRONT VIEW
1/8" × 3/4" SPLINE
FULL LENGTH
3/4" × 2" STOP
3/4" PLYWOOD
3/4" × 2"
STRETCHER
3/4" × 2 1/2"
SHELF
UNDERDRAWER SLIDE
SCREW POCKET
SIDE SECTION A-A

Continued

Note: We painted the interior of the cabinet to match the color of the plastic laminate we used. If you decide you don't want to paint, you can either use hardwood veneer plywood for the cabinet or cover its interior with plastic laminate. You can find plastic laminate in a variety of thicknesses, colors, and sizes at most lumberyards, home centers, and cabinet shops. There's a difference in laminate thickness from one manufacturer to the next, so you'll need to know the thickness of the laminate before doing any cutting.

The Cabinet

1 Cut plywood pieces A, B, C to length and width. Next, measure the thickness of the plastic laminate you're using and multiply it by three. Cut this amount from the width of the bottom (B) to allow for the thickness of the laminate.

2 Arrange the plywood parts A, B, C with the best side facing toward the interior of the cabinet. Set the bottom (B) back from the front edge of the sides (C) a distance equal to two thicknesses of the plastic laminate. Also allow the top (A) to overhang the sides by 1/32". Assemble the box using #8×1¼" flathead wood screws and woodworker's glue. Using screws, attach a 1×2 piece of scrap diagonally across the back to temporarily hold the case rigid.

3 Allow the glue to dry, then carefully belt-sand the top overhang, so the sides are square and flush. Fill all screw holes and voids with wood putty.

4 Rip the stretchers (D) to width. Before crosscutting them to length, find the exact length by measuring the inside opening of the cabinet. Using glue and two screws in each end, attach one of the stretchers to the top front of the cabinet. Set this stretcher back from the edge a distance equal to two thicknesses of the laminate. Make sure that the stretcher is square with the front of the cabinet. Now, attach the other stretcher to the back of the cabinet in the same manner, but set it in only one thickness of the laminate. Fill all screw holes with wood putty.

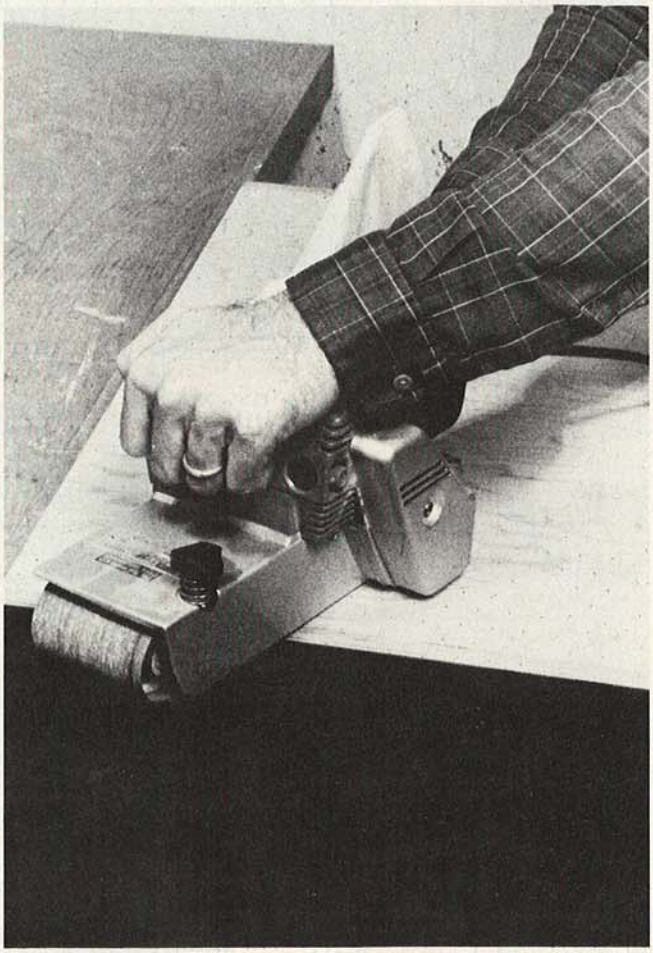
5 You are now ready to cut the plastic laminate for the front stretcher, the front edge of the bottom, and the sides. When laying out your cutting plan, allow an extra 1" minimum on both the length and width of each piece for trimming after gluing. Cut the laminate faceup on a table saw, using a carbide-tipped blade or a plywood blade. (You can also use a hand laminate cutter to make your cuts.)

6 Using contact cement, apply the laminate to the sides, front stretcher, and the front edge of the bottom. Be careful during this procedure because you can't easily change the position of the laminate once it's in place.

Caution: Contact adhesives, the older solvent types as well as the newer water-based variety, require adequate ventilation. Be sure to read and follow all manufacturer's warnings on the label and container lip. In addition, the solvent types (though no longer sold) often can be extremely flammable and set off by a cigarette or pilot light. If you still have this kind on your shelf and plan to use it, exercise caution and follow directions carefully.

After adhering the laminate, carefully trim it flush with the surface with a router fitted with a flush-trim bit or with a belt sander (see the photo.) You also can use a mill file to trim laminate.

Cut the laminate for the top, allowing for the added width of the side laminate pieces. Apply the laminate



to the top and trim it, using a router with a laminate trimmer. Be careful to not scratch the laminate on the sides.

The Handles and Trim

1 Rip enough ash stock for parts E, F, G, H. Miter one end of each of the stiles (E) and both ends of the rails (F) at 45 degrees. Then, crosscut the handle parts (E, F, G) to length. Set the trim pieces (H) aside for now.

2 Cut a ¾″ groove ⅜″ deep along the center of the bottom of the rails (F) with a dado blade or router. Next, cut ¾″ stopped grooves ⅜″ deep in the mitered end of the handle stiles (see plan detail). Square up the stopped grooves with a chisel.

3 The stiles (E) and trim (H) are attached to the cabinet with spline joints. Using a router with a ⅛″×⅜″-deep slotting cutter, rout spline grooves in the edges of the cabinet (see photo below and Section A-A in the drawings). (If you don't have a slotting cutter, you can use dowels instead of splines.) Start and stop and spline grooves about ¾″ from the edges of the cabinet. Rout matching grooves in the stiles (E) and the trim (H). *Note:* When routing the stiles, be sure you stop the groove short of the top of the cabinet.

4 To avoid scratching the laminate with sandpaper, sand all the handle pieces before assembly.

5 Cut the spline material needed, check for a good fit, and glue and insert them into the grooves in the cabinet. To attach the handle assemblies, start by gluing and fitting the stiles onto the spline material. Now, glue and fit the handle stretchers (G) into place, and glue and fit the rails. Clamp the assemblies and allow the glue to set up.

6 Carefully measure for the trim pieces (H) and cross-cut them to length. Finish-sand these, then glue them into place and clamp securely.

The Back

1 Carefully measure the opening for the back (I). (The back will butt even with the trim and the handle stiles and flush with the bottom of the cabinet.) Cut the back a little oversize and apply laminate to it. Trim the back to its final dimensions on the table saw (laminate side up). Attach the top of the back from the inside of the cabinet, using glue and #8×1¼″ flathead wood screws. Glue and clamp the bottom edge of the back, then turn the cabinet upside down and use a ⅜″ brad-point drill bit to drill three screw pockets in the bottom of the cabinet (see detail). Install #8×1¼″ flathead wood screws into the screw pockets.

The Doors and Shelf

1 Measure the opening for the doors (J). Allow for plastic laminate on the door edges and for clearance between the doors and the trim. Cut the doors and the shelf (K) to size, then apply plastic laminate to both, starting with the edges. Trim off the excess, then apply laminate to both sides of the doors and the top of the shelf.

2 We used Grass hinges for the doors of this cabinet. They mount to the back side of the door and to a hinge mounting block (L) located perpendicular to the handle trim (see plan detail). Cut the hinge mounting blocks to size, making sure to notch the top front edge to fit around the trim. Bore holes in the doors for the hinge cups. Follow manufacturer's instructions. Place shims between the mounting blocks and the ends of the cabinets, then screw the blocks to the ends. Before you install the doors, drill the mounting holes for the handles.

Finishing the Project

1 Drill a hole in the back or top of the cabinet for wires and cables. Sand the edges of the hole.

2 Round-over all the exposed edges of the ash trim and handles, using a router with a ⅜″ rounding-over bit. Finish-sand the hardwood trim. We used masking tape to protect the laminate during sanding.

3 For a finish, paint the inside of the cabinet with a primer followed by one or two finish coats that match the color of the laminate. Apply two coats of polyurethane varnish to the handles and trim. Steel-wool the varnish between coats.

4 After the finish has thoroughly dried, install the shelf. Fasten a pair of underdrawer slides to the underside of the shelf and the bottom of the cabinet, making sure to align the slides carefully to avoid binding. Finally, set the cabinet on its back and install the casters and the wire pulls.

The old hand ways

"I had never handled a tool in my life, and yet in time, by labour, application, and contrivance, I found at last I wanted nothing but I could have made it."

—Daniel DeFoe
The Life and Adventures of Robinson Crusoe

Print this article

By Roy Underhill
Master housewright at Colonial Williamsburg, host of the highly successful P.B.S. series "The Woodwright's Shop," author, lecturer, and master craftsman.

When *Robinson Crusoe* was published in 1719, it was virtually the first novel written in the English language. It was a smash hit. Since that time, thousands of stories have been told and forgotten, yet this tale of a man forced to rely on simple tools and common sense has endured and is familiar to almost everyone today. What could account for its timeless appeal?

Is it just escapism? The stresses that were part of everyday life in bustling, progressive 18th-century London are still with us today — with a vengeance. Could this explain the enduring popularity of the theme of "the simple life"? Is this column devoted to "the old ways" in the world's newest woodworking magazine just more therapeutic nostalgia? No way!

The test of a classic is that it remains eternally modern. Traditional methods endure because they always have worked and they always will. Your axe will still fell a tree. Your mallet and chisel will still cut perfect dovetails. Your plane (just a block of wood with a piece of steel in it) will still give you the finest surfaces and the crispest moldings. The old ways work; and if you don't believe it, just ask yourself how we got to where we are today. There was life before electricity.

But power tools work, too, and are readily available. Why would anyone choose to work wood with old hand tools? You might as well ask why some people prefer to travel on cross-country skis rather than snowmobiles. Both will get you there; the difference is in the quality of the journey.

In this column we will explore the old paths in the way they were originally taken, not as adventuresome re-creations, but as professions that put food on the table and clothes on the kids. You know their names, you may even carry one of them yourself. Who has not met a Cooper, a Carpenter, a Sawyer, a Joiner, a Carver, a Turner, or one of the many Wrights? Each trade with its own tools, trees, and tricks. But before there could be any of these specialized trades, there had to be a pioneer, the homesteader who laid the foundations of the civilization to follow.

THE PIONEER—Part 1

The first thing one who seeks to live in the wilderness must do is to find protection from it. To build with trees, however, you must disconnect them from the ground. The axes and men who came over on the first boat were no match for the ancient giants of the American forest. But, as Benjamin Franklin noted when he watched the construction of a frontier fort in 1755, it was not long before they were equal to the task: "Seeing the trees fall so fast, I had the curiosity to look at my watch when two men began to cut at a pine; in six minutes they had it upon the ground, and I found it of fourteen inches diameter."

FELLING

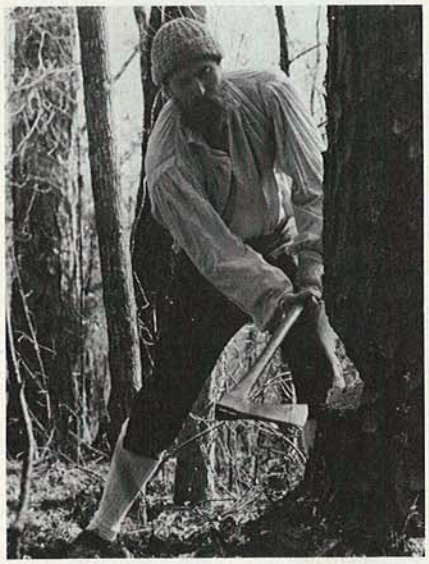
An operation as significant as felling a tree must be preceded by the proper diagnosis. First, you must look for any predisposition of the tree to fall in one direction caused by a lean or extended limbs. It is often better to fell the tree at right angles to this direction, even if this leaning will cause it to fall into another tree and hang up. The reason for this is that you want the tree to be cut well nigh through before it goes over. You don't want to have a lot of splintering and surprises. This is dangerous business; to stay alive, you must be in control.

The way to fell a tree with control is to hinge it down. Stand to the side of where you want the tree to fall and swing about you with the axe at full extension to be sure that there are no limbs, vines, or

people to catch your axe on.

Make the first cut on the side that faces where you want the tree to fall. You are using the axe efficiently when it feels as if you are whipping it into the tree rather than pushing it. When the first notch is more than halfway through the tree, move to the opposite side and cut the back notch a little higher up the tree than the first one. The wood that remains between these two notches is the hinge. Keep to the side when it gets ready to go over. Never stand behind the falling tree; it could on occasion kick back and would squash you like a bug.

Felling the tree is the first operation of woodworking, and the speed and ease of your axe work is



a prime example of one of the Great Secrets of Woodworking: *Exploit a wood's weakness when you work it and its strength when you use it.*

Examine the surface of any one of the chips that flew from the notch when you cut down the tree. When you are working at your best, the area of the chip that was actually severed by the axe blade will be only about one-fifth of the total surface. The rest of the surface will plainly show that it was formed by splitting. This shows the extent to which you have taken advantage of the natural planes of weakness in the wood of the standing tree.

SQUARING

Unless you are building a far-northern style of log house, you will need to flatten your log on at least two sides before you use it. This need is not entirely based on the neurotic compulsion to impose strict geometric order on natural forms. Bringing the log to a standard rectangular section is genuinely helpful in the systematic construction of a frame building.

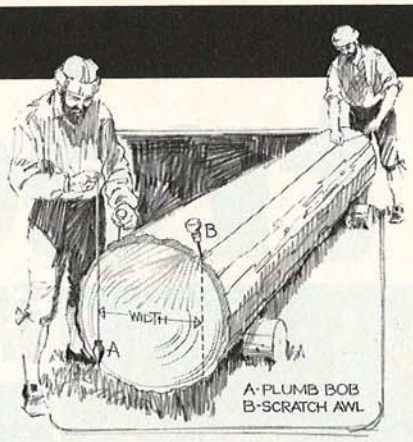
LAYOUT

Although you can do it entirely by eye, even the most experienced workers usually place guidelines on the log before attacking it with their axe. There are many ways to work, but this is what I do:

First, I roll the log up off the ground onto two short cross logs. These supports have notches cut in their tops so that the log will not rock about. If the log is somewhat bent, I orient it so the curve is in the vertical plane rather than to one side. I then sit down at the small end of the log with a plumb bob, a scratch awl, and a square and begin the layout.

At the top of this end of the log, I spear the end grain twice with the scratch awl to mark out the thickness to which I want to hew the timber. From these two points I drop the plumb line and similarly mark the lower end. With the square and awl, I then scribe vertical lines that connect the top and bottom points. I get up, go to the other end, and do the same thing again.

Once I have the two ends marked out, I connect them down the length of the log with a snap line. I use the charcoal of willow wood rubbed on the string, but chalk is as old as the white cliffs of Dover. When you snap the line, it is important to strain it in the same vertical plane as the surface you want to create. If you mistakenly pull out radially from the heart of the log, the odd contours of the log's natural surface will throw your line quite a bit off.



HEWING

Hewing is a means of getting what you want by chopping off what you don't need. Again, almost all of the wood is removed by splitting. Ideally, you could drive in a wedge at one end and split off the whole side at once. Realistically, though, you will have to shorten the length that is going to be split off. While most trees can be separated rather easily by splitting, not all trees will conform to your plans. Some trees will not split smoothly, even within the same species, so often knowledge is as important as technique.

The way to do this is to stand on top of the log and chop a series of notches into the side down to the line. Space these notches about a foot apart, unless you come to a knot, in which case you must chop

in right atop it. You then swing down with the grain and split off the chunks between the notches. (This is why you must be rid of the

Continued on page 84

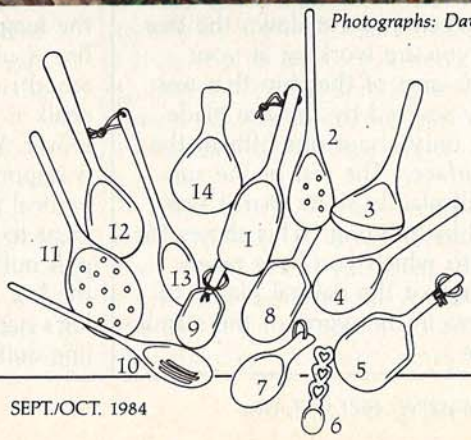
treenware

Spoons and such from greenwood from Roger Sandstrom

Print this article

Photographs: David Jordan

1. Sassafras scoop (hand-chopped)
2. Cherry pierced spoon
3. Ash crotch ladle
4. Sassafras flat spoon (hand-chopped)
5. Sassafras scoop (hand-chopped)
6. Sugar pine carved love spoon
7. Pecan skimmer
8. Sassafras scoop (hand-chopped)
9. Apple scoop
10. Persimmon slotted spoon
11. Cherry flat serving spoon
12. Sassafras flat spoon (hand-chopped)
13. Wild plum ladle
14. Maple burl hand dipper



A tall, imposing man, Connecticut-born Roger Sandstrom came to his appreciation of nature at an early age. This interest was nurtured by a father who taught Roger how to use the tools of a great uncle, and later by the works of Eric Sloane.

Roger had always enjoyed working with wood, but on a trip to Missouri in 1972, he discovered a myriad of native woods there that broadened his woodworking horizons. Roger has fashioned items from a great number of species, including lilac, redbud, mulberry, wild plum, osage orange, peach, grapevine, and even poison ivy. Bowls, spoons, and ladles made from burls are among Roger's favorite pieces.

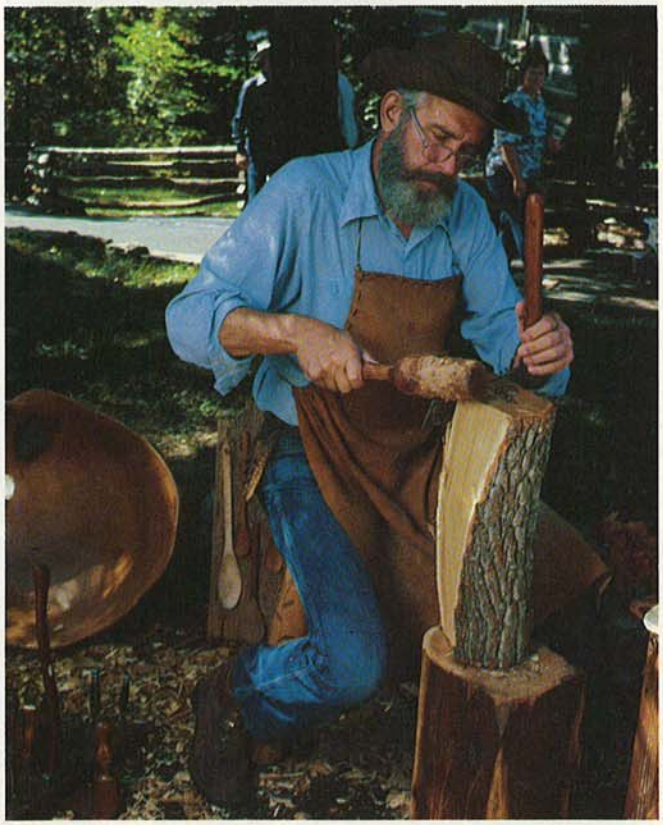
Since moving to Missouri in 1973, Roger has devoted most of his time to his art, except for that spent exhibiting and lecturing at nature centers and schools around the country. He, his wife Mary, and their children live on a farm near Seymour, Missouri.

Why has he chosen the quiet lifestyle he so prizes? Because "I'm doing the things I wanted to do as a child. I'm never going to get rich, but it pays the light bill, and the price of bread, and that's all that counts."

Hewing woodenware items from available woods was a way of life in colonial times, and before. It was the local cooper's job to make and repair containers and utensils. But sometimes it wasn't practical to wait for him to do the needed work. More often than not, people would take things into their own hands and fashion their own ladles, dippers, spoons, scoops, boxes, bowls, even cups.

While the making of treenware is pretty much a lost art, it is something that can be learned. And the needed tools are few: a sharp ax or hatchet, a gouge to hollow out the bowls, a knife, a file, and some sandpaper. Who knows, after watching Roger Sandstrom handcraft a stirring spoon on this and the following pages, you may be tempted to try your hand at this fascinating craft.

For this project, Roger chose one of his favorite local woods, sassafras, a wood he likes for its workability and grain pattern. Here, Roger is "squaring up" the log with a mallet and froe. One of the splits taken off in the process will soon be shaped into a one-of-a-kind stirring spoon. You can use green or dried wood.



With his trusty ax, Roger begins to shape the front side of the bowl end of the spoon. The sycamore burl bowl in the background is the second largest in the world.

Once the contour of the bowl has been roughed out, Roger then concentrates his effort on the handle end. Truing up the surface is the aim here.

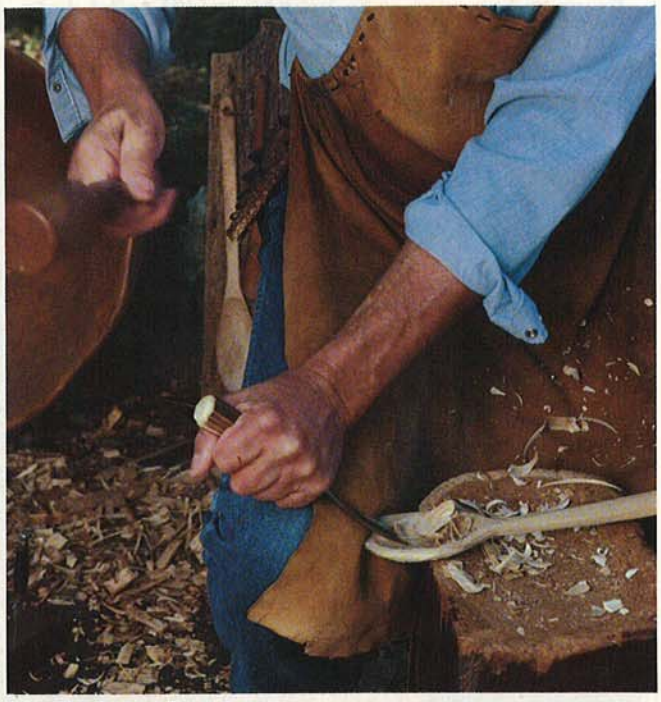
Continued

Removing the bark from the back side of the split comes next. The natural curvature of the split makes shaping the back side of the bowl fairly easy.

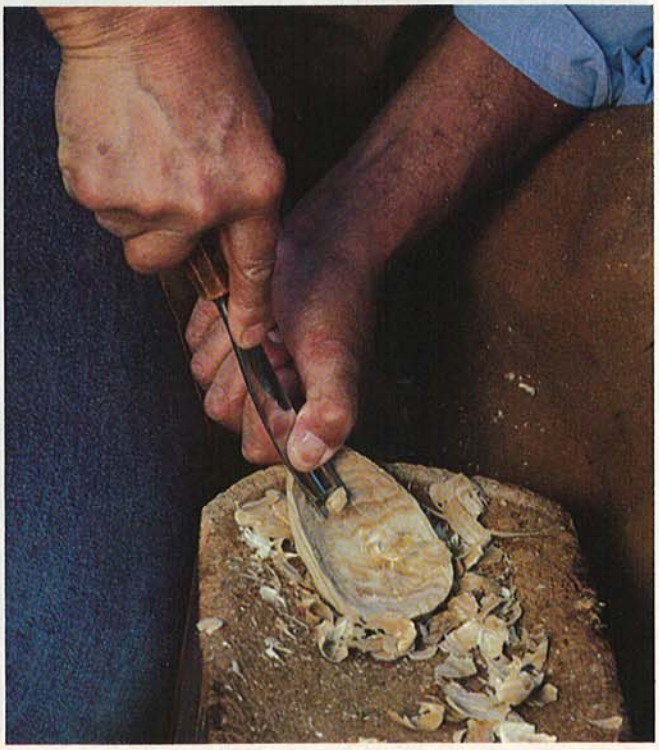
To finish the rough-out stage, Roger cuts away excess material along the length of the handle. He is especially careful near the end of the split to take a like amount of wood from either side of the handle to keep the symmetry intact.

Next, Roger trades in his ax for a knife, which he uses to further define the shape of the spoon. He's also quick to point out that although he pulls the knife toward him as he works, it is not a safe practice.

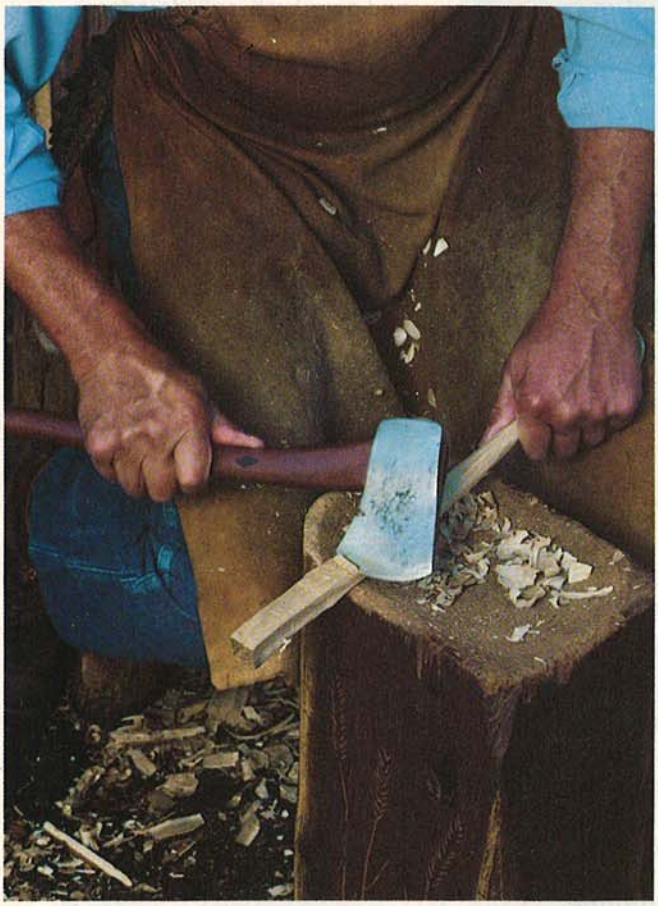
To scoop out the material from the bowl, he calls on a gouge and mallet. The spoon is several inches longer than its finished length. This extra length allows Roger to vise the utensil between his legs. Again, he cautions against imitating his technique. He recommends instead using a "real" vise to hold the work.



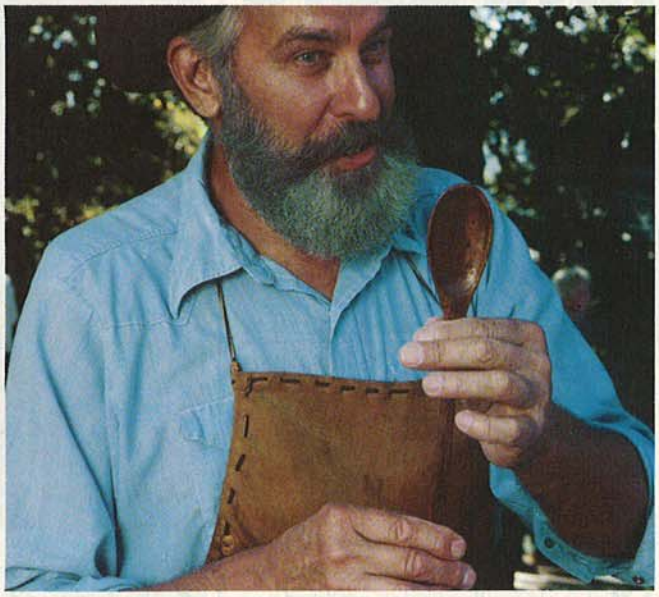
Here, Roger works with the gouge alone to remove some of the rough spots left in the bowl. He likes to gouge the bowl down to a thickness of ¼ inch.



Roger now cuts off the excess material at the handle end with his ax. (The length of this particular implement is 13 inches.) Then, he does some final touching-up with a knife. It took Roger about 20 minutes to fashion the spoon.



Once the shaping is complete, Roger turns the project over to his wife, Mary, who sands and applies a finish of raw linseed oil immediately to minimize splitting and cracking. Mary prefers this finish because it's nontoxic and it accepts wax well.



How to take care of treenware

The Sandstroms list several do's and don'ts in a flyer they give customers of their product.

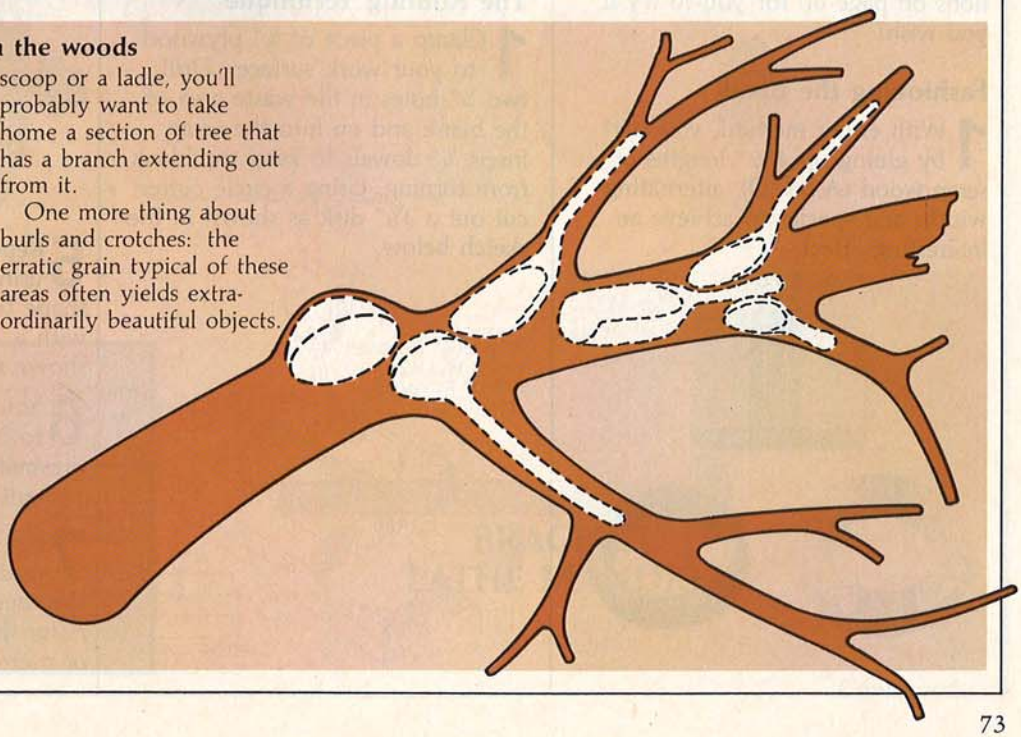
- *Don't expose treenware to water for long periods.*
- *Condition treenware you will be using by washing it with soap and water, rinsing it quickly, and letting it dry thoroughly. If the grain rises, sand smooth, wipe clean, and apply a light coat of cooking oil. Wipe away excess oil.*
- *With decorative pieces, a light coat of paste wax from time to time will revive their natural beauty.*

How to locate treenware in the woods

One of the neat things about making treenware is that the raw material is no farther away than the nearest woods. You can use almost any wood, so locating a piece won't be hard. Look for fallen portions of trees that have not begun to decay.

Once you find a likely tree, try to spot configurations that approach those of the item you plan to fashion. Burls—those unsightly bulges sometimes found along the trunk or branches of a tree—make ideal material for bowls and cups. And if you want to make a curved-handle scoop or a ladle, you'll probably want to take home a section of tree that has a branch extending out from it.

One more thing about burls and crotches: the erratic grain typical of these areas often yields extraordinarily beautiful objects.



designer **bracelets**

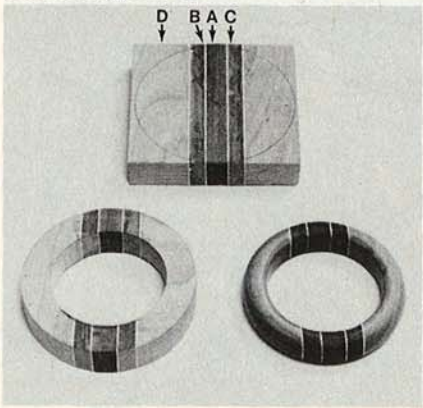
Print this article

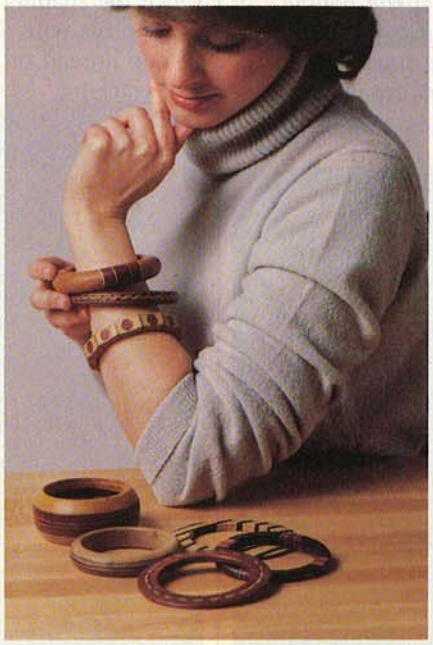
With this project, making the item is only half the fun. The best part comes when you surprise a friend or acquaintance with one of these beauties.

Not only will you be credited with being one of the world's greatest wordworkers, you'll also get high marks for your thoughtfulness. We'll show you two ways to make the bracelet that's shown below in various stages of construction. We made our first ones on a lathe, but later found out that making them is just as easy with a router. We've included a couple of design variations on page 00 for you to try if you wish.

Fashioning the Blank

1 With either method, you start by gluing up 4½" lengths of scrap wood (A,B,C,D), alternating widths and species to achieve an interesting effect.





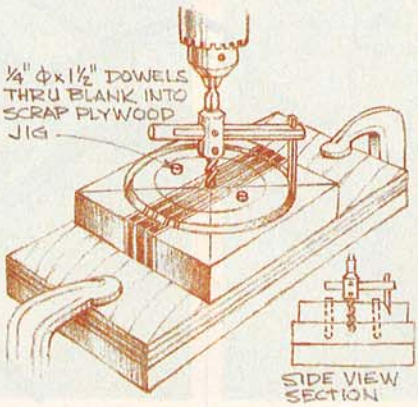
Designer: David Jordan • Photograph: George Ceolla

2 After the glue has set up, sand the front and back of the blank smooth. We used a disk sander to do this. Then cut the blank to 4" square.

3 Draw diagonal lines from corner to corner to find the blank's center. Then, using a compass, scribe a 3½" circle to define the perimeter of the bracelet.

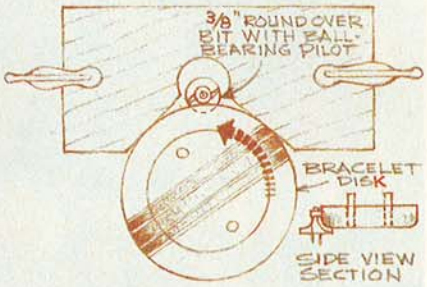
The Routing Technique

1 Clamp a piece of ¾" plywood to your work surface. Drill two ¼" holes in the waste area of the blank and on into the scrap. Insert ¼" dowels to keep the blank from turning. Using a circle cutter, cut out a 3½" disk as shown in the sketch below.

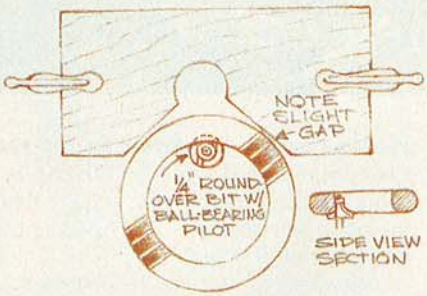


2 Make a routing jig like the one shown in the drawing below, using ¾" plywood. Clamp the jig to your router table, position the disk as shown in the sketch, and round-over both outside edges.

3 Thread a bolt through the center hole of the disk, then chuck it into a drill and sand the surface smooth.



4 Put the disk back onto the ¾" plywood you used in step 1, and secure it with the ¼" dowels. Adjust the circle cutter and drill a 2½" (or larger) hole.



5 Reposition the routing jig, then using the jig as a steady rest, shape the bracelet's inside edges with a ¼" rounding-over bit as shown in the sketch above.

6 You'll have to do some sanding to bring the bracelet to its finished smooth shape. We used 120-grit sandpaper to do this.

7 Finish the bracelet with several coats of penetrating oil finish. We used Deftoil natural Danish oil. After the oil dries, apply two coats of paste wax.

The Turning Technique

1 Start by making a mandrel like the one shown in the sketch below. We used a 3″ Philippine mahogany turning square. First, turn the square round between centers, then cut off the length required for the mandrel. Drill a ¾″ hole ⅜″deep in one end with a spade bit.

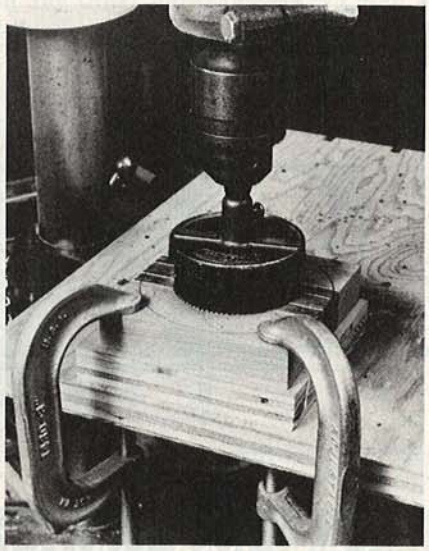
Drill a 5/16″×2″-deep hole in the center of the first hole. Then, flip the cylinder over, and drill a 1½″-diameter hole to within 1″ of the other end of the cylinder.

Insert a 5/16″ T-nut into the end of the mandrel, and screw the mandrel to a faceplate. Turn the last inch or so of the mandrel down to the inside diameter of your bracelet (ours is 2½″, but you may want a larger (or smaller) inside diameter). Hollow out the end of the mandrel so it will accommodate the wooden plug. Using a band saw or jigsaw, cut four saw kerfs in the mandrel.

Fashion a plug like the one shown. Drill a 5/16″ hole in the plug's center, then run a bolt and washer through it.

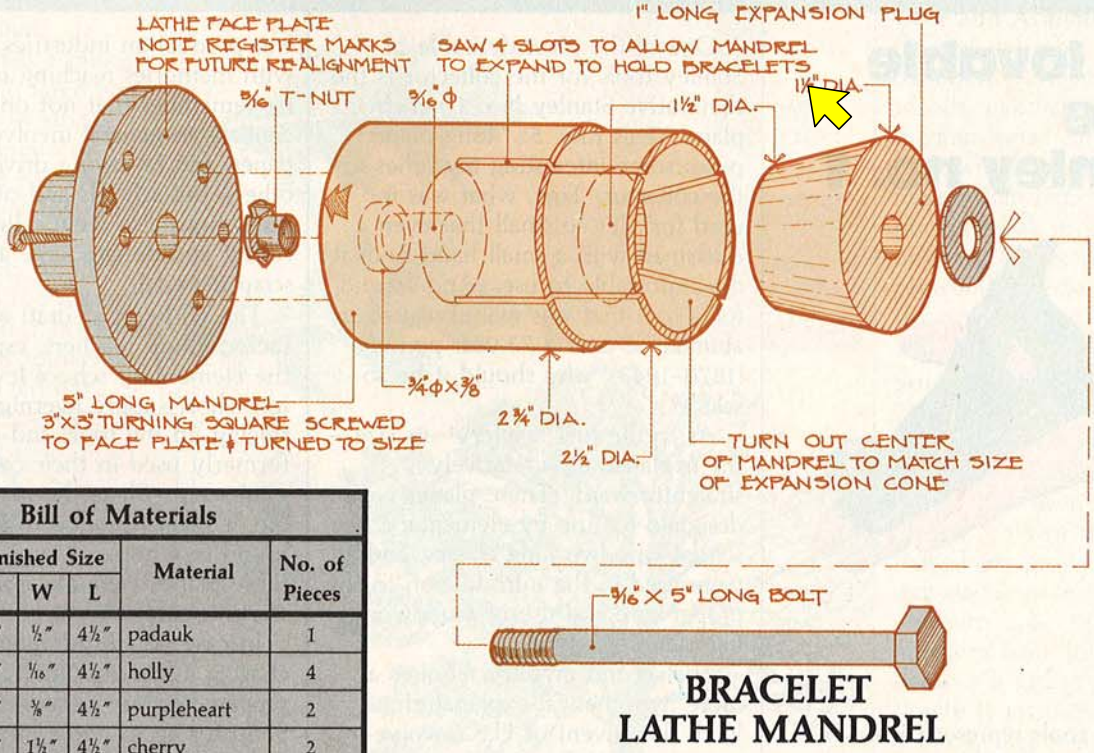
2 Repeat Steps 1, 2, and 3 under "Fashioning the Blank."

3 Using a hole saw or a circle cutter, cut a 2½″ (or larger) hole from the center of the blank as shown below. Round off its corners with a band saw or jigsaw, then mount your blank on the mandrel. Tighten the bolt to expand the mandrel to hold the blank.



4 With your lathe set on a slow speed, turn the blank until it is round (see the photo below). We used a gouge to do this. Then round-over the edges and finish the sides with a skew chisel.

5 Once you have the desired shape, sand the bracelet smooth and apply several coats of penetrating oil finish, followed by a couple coats of paste wax. We sanded the outer surfaces of the bracelet on the lathe, and the inner ones with a sanding drum.



BRACELET LATHE MANDREL

Bill of Materials

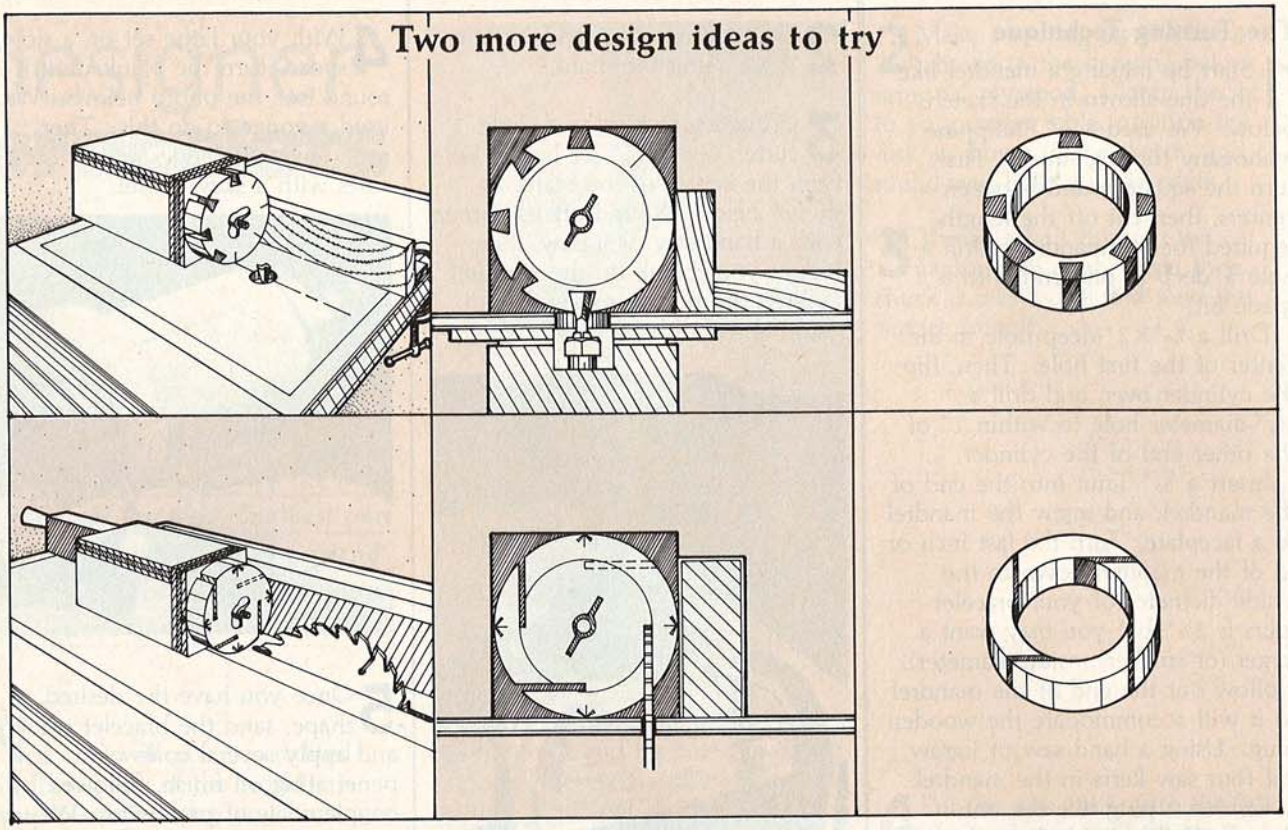
Part Name	Finished Size T	Finished Size W	Finished Size L	Material	No. of Pieces
A	¾″	½″	4½″	padauk	1
B	¾″	1/16″	4½″	holly	4
C	¾″	⅛″	4½″	purpleheart	2
D	¾″	1½″	4½″	cherry	2

Supplies: woodworker's glue, penetrating oil finish, paste wax, ¼″ dowel

Continued

SCRAP WOOD PROJECT

Two more design ideas to try



TOOLS AND TOOL COLLECTING

the lovable little Stanley no. 1

Print this article

Stanley tools represent a major category of collectible tools, and can form the basis for a rewarding and stimulating hobby.

One of the most desirable of Stanley tools for the collector is the diminutive Stanley No. 1 bench plane. This tiny, 5½"-long plane poses some interesting mysteries for the collector. First, what was it used for? It's so small that even a craftsman with a small hand finds it uncomfortable to use. And second, for a tool that was manufactured in abundance over a 73-year period (1870–1943), why should it be so scarce?

As to the first mystery—its size—the explanation is relatively straightforward. These planes were designed for use by elementary school woodworking classes, and were used in the introduction to the proper care and use of woodworking planes.

The second mystery requires a more hypothetical explanation. With the advent of U.S. involvement in W.W. II came the need for scarce raw materials by factories involved in the rapidly increasing war production industries. Those with memories reaching back that far remember that not only were civilians in general involved in paper- and fat-saving drives, among others, but schools and other institutions also were called on to collect and donate large amounts of scrap material.

The widespread draft also was a factor. Shop teachers, especially at the elementary school level, came into short supply overnight, thus freeing up the tools and materials formerly used in their courses as vital scrap. Since the majority of No. 1 planes produced were to be found in schools, a large number of these planes were absorbed by the wartime scrap drives.

In case you're thinking of purchasing a Stanley No. 1, be prepared to pay between $400 and $650 for an example in good or better condition. Also be sure to buy from a reputable dealer who will guarantee the plane is genuine.

OAK
The world's number one hardwood

Some woodworkers may dispute the above assessment. But sales figures show that without doubt, more oak passes from manufacturer to retailer to consumer each year than any other hardwood. Let's take a closer look at this best-seller to see what's behind oak's long-standing popularity.

Print this article

Brief History
The Greeks and Romans used oak to construct their seagoing vessels because of its strength, toughness, and durability. The Saxons in England fattened their hogs with acorns, and ground the acorn for use as a seasoning. During this same period, landowners used the acorn as part of their daughters' doweries.

In Europe, many great halls and castles were paneled with oak wainscoting and almost all furniture there was made of oak.

Today, the oak provides food, tanbark for tanning leather, dyes, ink, even commercial cork.

Wood Identification
Though there are 14 oak species of commercial importance grown in the U.S., they're marketed either as red oak (*Quercus rubra*) or white oak (*Quercus alba*).

Red oak has a pinkish red cast to it, large pores (you can blow smoke through one end of a piece of red oak and it will come out the other), and is quite hard.

White oak, on the other hand, is a tannish brown wood, has smaller pores, and is somewhat harder than red oak.

Paul L. McClure

Wood technologist, lecturer, owner of Wood World, a retail hardwood store in Tempe, Arizona, woodworking instructor, and former exotic hardwood buyer.

Woodworking Properties
Both red and white oak are moderately stable before and after working, and both work well with hand and power tools. Because white oak contains an abundance of tylosis (a membrane that seals cells), it is waterproof.

Oak accepts finishes well. With built-up finishes, you may want to use a paste filler to fill the pores. This isn't necessary with oil finishes.

Uses in Woodworking
With these woods, the list goes on and on. You can use them for furniture, flooring, interior trim, paneling, turning, carving, and woodenware. White oak has two other important applications. It's highly prized as a material for making barrels and other watertight vessels, and it's one of the best woods for steam-bending wooden furniture parts.

Cost and Availability
One of the most commonly available of all woods, oak falls into the medium price category, with white oak somewhat higher than red. You can purchase oak in several different forms: lumber, plywood, interior trim, flooring, turning blanks, and veneer.

Source of Supply
Over 50 percent of the oak logged annually comes from the southern states. However, if you can get hold of some that's been grown in the Appalachians or the northern states (it's sold as northern oak), buy it. Because it grows more slowly than southern oak, it has a finer texture, more uniform color, and it works better.

the sunshine express

Most toys are used for awhile, then forgotten. That won't happen with this little charmer. If properly cared for, it will delight special little folks for generations.

Print this article

As we were watching this fanciful project take shape in our shop, we began to realize how special it really is. We think you will agree. Its classic lines and sturdy construction guarantee you a project that will stand the test of time. You might even want to sign and date this heirloom to record your considerable efforts for those who will appreciate them in years to come.

Design: Jim Downing Photograph: George Ceolla

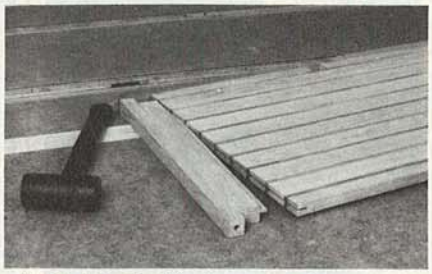
Note: **Many of the pieces used in this wagon must be planed down or resawn to their finished thickness. If you have one, a surface planer is the best tool for reducing thickness. You can also resaw with a band saw or table saw. Whichever tool you use, be sure to exercise all due caution when using it.**

The Wagon Bed

1 Cut pieces A and B to size, plus 1″ in length, then glue and clamp them together, using epoxy glue. Allow glue to dry overnight.

2 Cut the bed to its finished length, making sure the ends are square. Now, mark the location of the openings for the sideboard stakes. Cut pieces C, D, and E to size and glue and clamp them to the bed.

3 Cut a ⅛″ groove ½″ deep along the length of each end of the bed. Then, cut pieces F and G to size (be sure to notch each end of F as shown in the plan). Fashion a ⅛″×½″-long tongue along the edge of F and G. Glue and clamp both pieces to the bed as shown here.



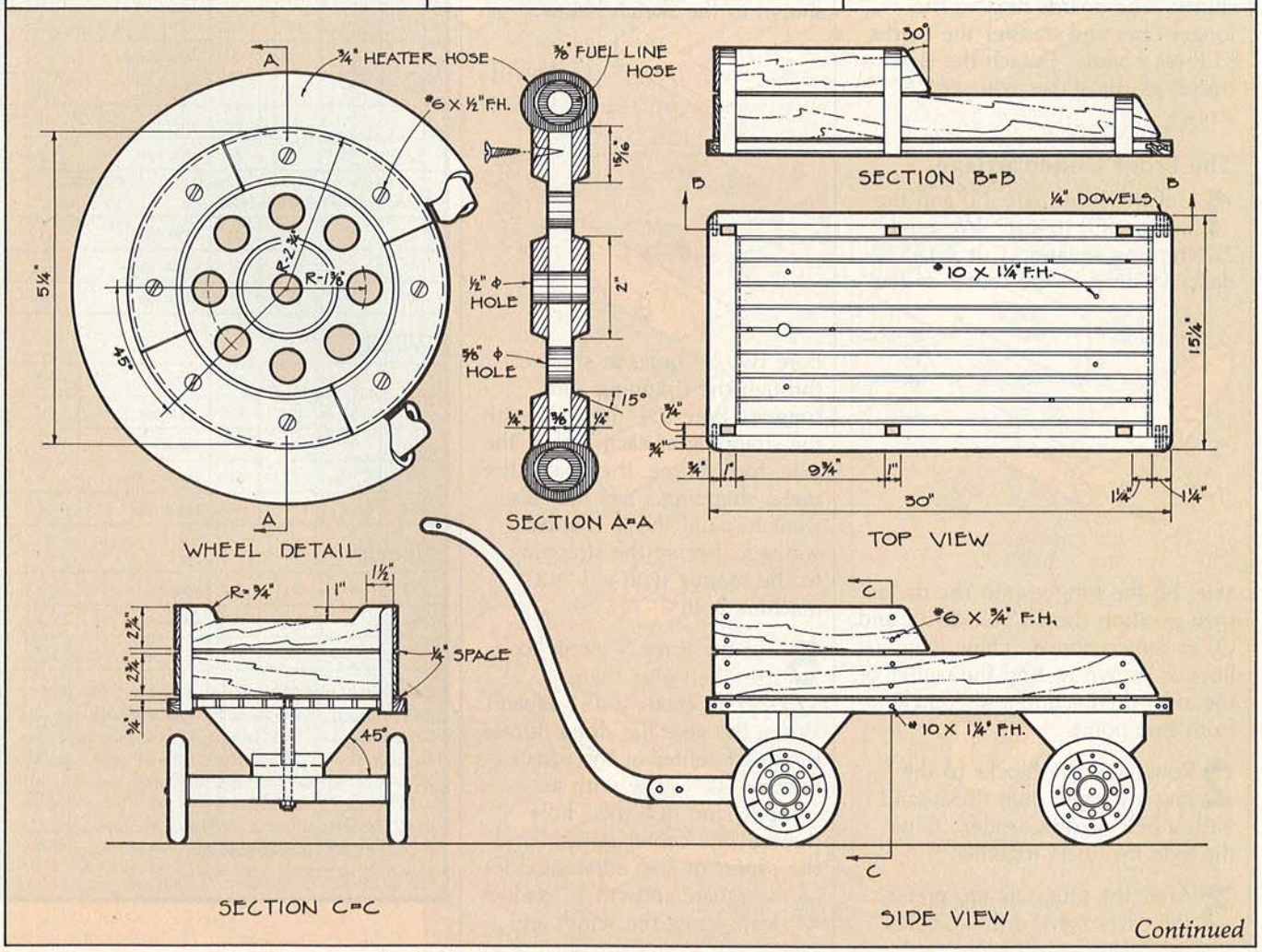
4 Cut both H pieces to size. Temporarily clamp them to the bed and drill ¼″ holes for dowels as shown in the plan. Glue and clamp both H pieces to the bed. Glue and drive the dowels in, too.

5 After the glue sets, scribe a ¾″ radius at each corner of the bed. Then, rough-cut the radii with a band saw or jigsaw. Smooth all surfaces with a belt sander.

The Side Boards

1 Resaw enough ¾″×2¾″ white oak to make the six ¼″ boards needed. We ran our lumber through the table saw, then smoothed each piece with a belt sander.

2 Cut one end of pieces I and J at a 30° angle, then scribe and cut a ¾″ radius at the top rear edge of each. Cut a section out of one of the front boards (K) — see the plan.



Continued

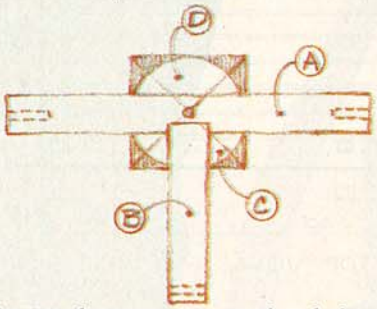
3 Cut the side board stakes (L and M) to length. Then, scribe and cut a ¾″ radius on the inside top edge of each stake.

4 Fasten the front boards (K) to two of the longer stakes (L) with #6×¾″ wood screws, making sure the ends are flush with the stakes. Allow a ¼″ space between the front boards. Check to make sure the stakes fit properly in their holes. You want a snug fit here.

5 With the front boards in place, position the long side boards (J) on the wagon bed so the squared end covers the end grain of the front board. (As a design variation, we cut the side boards ¼″ shorter than shown in the bill of materials and inserted a length of walnut in the space between the front and side boards.) Mark the placement of the remaining stakes. Lay the shorter side boards next to the longer ones and transfer the marks to these boards. Attach the side boards to the stakes with #6×¾″ screws.

The Front Undercarriage

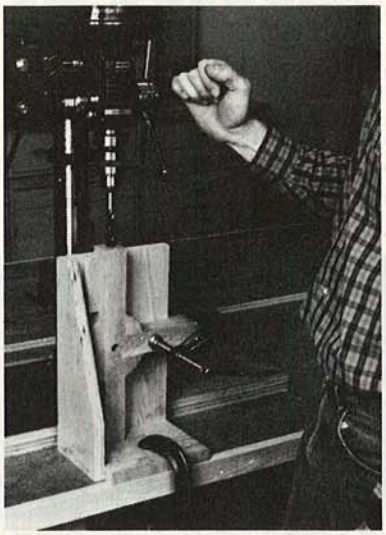
1 Cut the front axle (N) and the tongue (O) to size. We used 2¼″ turning squares. Cut a 1½″ dado ⅜″ deep in the center of the



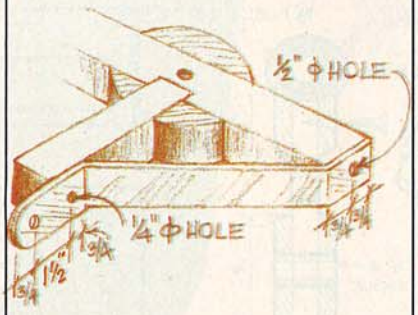
axle. Fit the tongue into the dado, then position the 1½″ blocks (P and Q) as shown above. Draw diagonal lines as shown to find the center of the axle, then scribe a 4½″ circle from that point.

2 Rough-cut the blocks to the proper shape, then finish-sand with a belt or disk sander. Glue the axle members together.

3 After the glue sets up, preferably overnight, drill ½″ holes through the axle and into each end of it as shown in the photograph below.



4 Cut the metal strapping (R) to length, then shape it as shown in the sketch below.



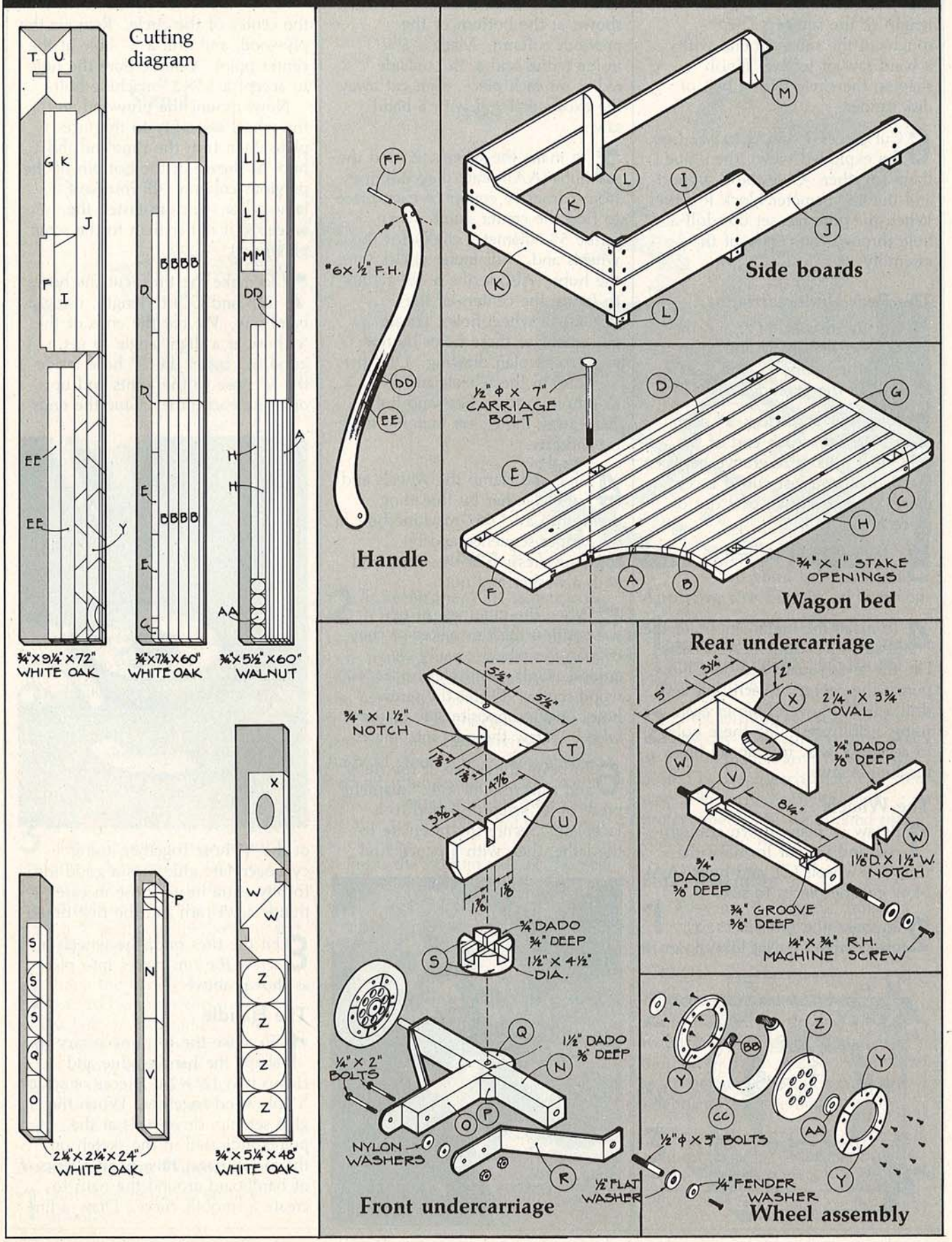
Bore two ¼″ holes as shown through the strapping and tongue. Bore a ½″ hole through the strapping at each end of the axle, too. Prime, then paint the metal strapping. You may also want to paint the ¼″ fender washers. Secure the strapping to the tongue with a ¼″×2″ machine bolt.

5 Cut the three S pieces to size, then glue them together to create a 4½″ square. When the glue has dried, locate the exact center of the square. Scribe a 4½″ circle with a compass and drill a ½″ hole through the center point. Find the center of two adjacent sides of the square and cut ¾″ dadoes ¾″ deep across the width and

Bill of Materials

Part Name	Finished Size T	Finished Size W	Finished Size L	Material	No. of Pieces
Wagon Bed					
A	½″	¾″	27″	walnut	9
B	½″	1¼″	27″	white oak	8
C	½″	¾″	1¼″	white oak	3
D	½″	¾″	14″	white oak	2
E	½″	¾″	9¾″	white oak	2
F	¾″	2¼″	13¾″	white oak	1
G	¾″	1¾″	13¾″	white oak	1
H	¾″	¾″	30″	walnut	2
Sideboards					
I	¾″	2¾″	13¾″	white oak	2
J	¾″	2¾″	28¾″	white oak	2
K	¾″	2¾″	13¾″	white oak	2
L	¾″	1″	6¾″	walnut	4
M	¾″	1″	3¾″	walnut	2
Front Undercarriage					
N	1½″	1½″	12¾″	white oak	1
O	1½″	1½″	6¾″	white oak	1
P	1½″	1½″	1½″	white oak	2
Q	1½″	1½″	4½″	white oak	1
R	⅛″	1½″	14″	metal strapping	2
S	1½″	1½″	1½″	white oak	3
T	¾″	3″	11″	white oak	1
U	¾″	3″	9″	white oak	1
Rear Undercarriage					
V	1½″	1½″	12¾″	white oak	1
W	¾″	5¼″	9″	white oak	2
X	¾″	4¼″	9″	white oak	1
Wheels					
Y	¾″	1½″	5½″	white oak	32
Z	¾″	5¼″	5¼″	white oak	4
AA	¾″	2″	2″	walnut	8
BB	¾″ dia.		19″	fuel line hose	4
CC	¾″ dia.		19¼″	heater hose	4
Handle					
DD	⅛″	1 9/16″	32″	walnut	6
EE	⅛″	1 9/16″	32″	white oak	6
FF	½″ dia.		3½″	white oak dowel	1

Supplies: ¼″ and ½″ white oak dowel rod, 28—#6×¾″ flathead wood screws, 2—¼″×2″ machine bolts with self-locking nuts, 4—½″×3″ bolts, 4—¼″×¾″ roundhead brass machine screws, 65—#6×½″ flathead wood screws, 1—½″×7″ carriage bolt and self-locking nut, 16—#10 ×1¼″ brass flathead wood screws, 4—½″ flat washers, 4—¼″ fender washers, 2—¼″ nylon washers, epoxy or resorcinal glue, cyanoacrylate glue, penetrating oil finish, polyurethane varnish, paste wax.


Cutting diagram
T U
G K
J
F I
EE
EE
Y
¾"×9¼"×72"
WHITE OAK
BBBB
D
D
E
BBBB
E
C
¾"×7¼×60"
WHITE OAK
L L
L L
M M
DD
A
H
H
AA
¾"×5½"×60"
WALNUT
X
W
W
Z
Z
Z
Z
¾"×5¼"×48"
WHITE OAK
P
N
V
2¼"×2¼×24"
WHITE OAK
S
S
S
Q
O
FF
"6×½" F.H.
DD
EE
Handle
M
L
I
K
J
K
L
Side boards
½"Φ × 7"
CARRIAGE
BOLT
D
G
E
C
H
F
A
B
¾"×1" STAKE
OPENINGS
Wagon bed
5½"
5¼"
¾" × 1½"
NOTCH
T
1⅞"
1⅞"
4⅞"
3⅞"
U
1⅞"
1⅞"
¾" DADO
¾" DEEP
1½" × 4½"
DIA.
S
Q
1½" DADO
⅜" DEEP
N
¼" × 2"
BOLTS
O
P
NYLON
WASHERS
R
Front undercarriage
Rear undercarriage
3¼"
2"
5"
X
2¼" × 3¾"
OVAL
¾" DADO
⅜" DEEP
W
V
8¼"
W
1⅛"D. × 1½"W.
NOTCH
¾"
DADO
⅜" DEEP
¾" GROOVE
⅜" DEEP
¼" × ¾" R.H.
MACHINE SCREW
Z
BB
Y
Y
CC
AA
Y
½"Φ × 3" BOLTS
½" FLAT
WASHER
¼" FENDER
WASHER
Wheel assembly

length of the square. Then, rough-cut the square round with a band saw or jigsaw. Finish shaping the circle with a belt or disk sander.

6 Cut pieces T and U to size (see the exploded view), then glue them together. Glue the X-support and the 4½"-diameter block together. When the glue has set up, drill a ½" hole through the center of the assembly.

The Rear Undercarriage

1 Cut the rear axle (V) and the support pieces (W and X) to size. Further shape W and X as directed in the exploded view.

2 Now, cut ¾" dadoes ⅜" deep 1½" in from each end of the axle. Cut a like-size groove between the dadoes you just cut to accept piece X. Also cut an oval out of piece X.

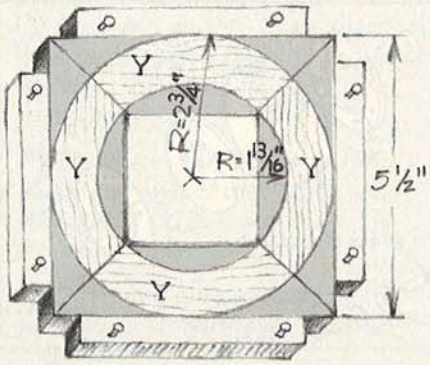
3 Glue pieces V, W, and X together. Set aside this subassembly.

4 To make the metal axles, cut the heads off of four ½"×3" bolts. File the ends square and flat. Now, punch the center of each bolt and drill a 7/32"×1"-deep hole in each, using a drill press. Tap these holes to accept ¼"×¾" roundhead brass machine screws.

The Wheels

1 Resaw or plane down enough oak and walnut to make the rims (Y), wheels (Z), and hubs (AA). Now cut the pieces to size.

2 To make the rim pieces (Y), place them in a jig like the one



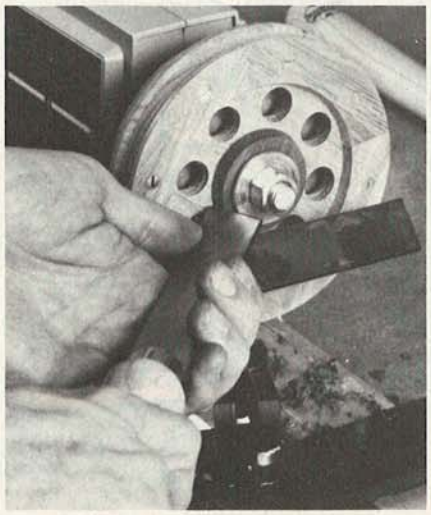
shown at the bottom of the previous column. Mark a 1 13/16" inside radius and a 2¾" outside radius on each piece, then cut away the excess material with a band saw.

3 To make the wheels (Z) and the hubs (AA), draw diagonal lines from corner to corner of each piece to find the center point. Then, scribe 5¼"-diameter circles for the wheels and 2"-diameter circles for the hubs. Also scribe a 1⅜" radius to locate the centers of the decorative wheel holes. Locate placement of these holes by referring to the plan drawing. Drill the ⅝" holes in the wheels and the ½" axle hole in the wheel and hubs. Trim away the excess material with a band saw.

4 Glue and clamp the wheels and hubs together by threading them onto a ½"×5" machine bolt in the proper sequence and by applying pressure at the other end with a washer and nut.

5 When the glue has set up, position the rim pieces so they overlap the wheel equally all around. Drill pilot holes for #6×½" wood screws. Offset the screw holes on the opposite side of the wheel. Screw the rims into place.

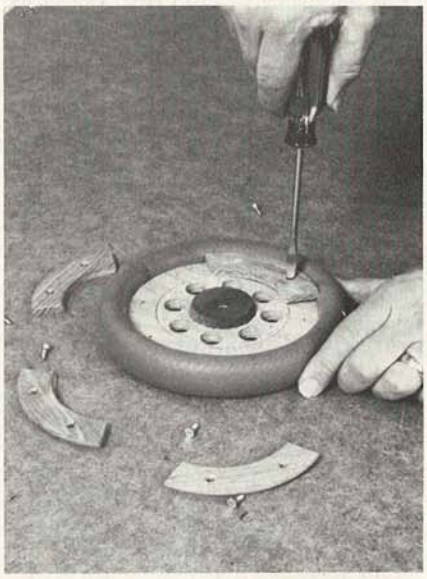
6 To bevel the edges of the hubs and rims, mount a 4½"-diameter piece of ¾" scrap plywood to a faceplate. Secure the faceplate to the lathe, then with a pencil find



the center of the circle. Remove the plywood, and drill a ½" hole at the center point. Counterbore the hole to accept a ½"×2" machine bolt.

Now, mount the plywood and the wheel assembly to the faceplate; then turn the rims and the hubs as shown at the bottom of the previous column. (If you have a lathe arbor, you can fasten the wheel to it rather than to the scrap plywood.)

7 To make the tires, cut the hoses (BB and CC) to length, using a band saw. We cut the ends of the ¾" hose at a slight angle to get a good fit. Insert the ⅜" hose inside the ¾" hose so the joints end up opposite each other. Glue the ends



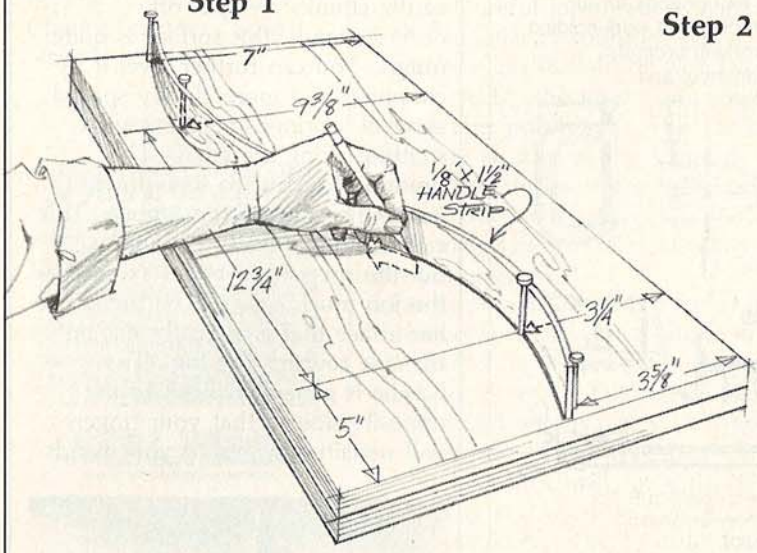
of the ¾" hose together, using cyanoacrylate glue. (It's a good idea to buy extra heater hose in case things don't turn out the first time.)

8 Fit the tires onto the wheels and screw the rim pieces into place as shown above.

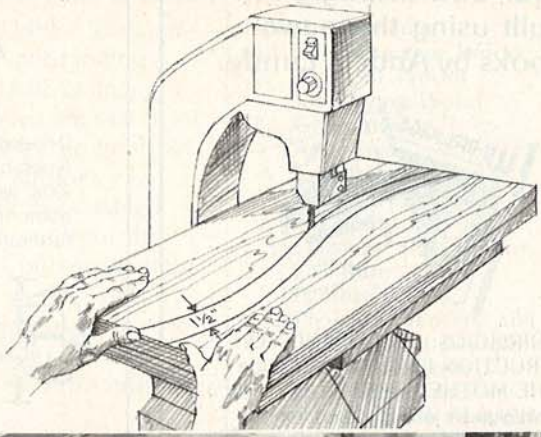
The Handle

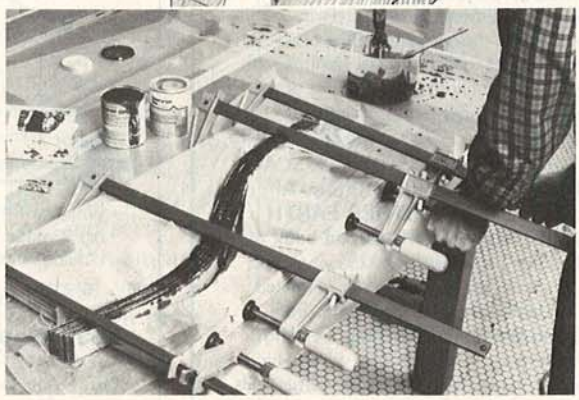
1 To make the form necessary to shape the handle, glue and clamp two 12"×24" pieces of scrap ¾" plywood together. When the glue sets up, drive nails at the points indicated in the sketch on the facing page, then bend a strip of hardboard around the nails to create a smooth curve. Draw a line

Step 1



Step 2





Step 3

along this curve. Then scribe a line 1½" to one side of the line you have just drawn and cut along both lines with a band saw.

2 Cut DD and EE to size, then laminate them, using epoxy or resorcinal glue. Clamp the handle in place as shown in the photo at right and allow the glue to set up overnight.

3 Remove excess glue with a belt sander, then draw (freehand) a contoured slope on the handle, decreasing the width from 1½" at the bottom to ¾" at the top. Also mark a ¾" radius at the bottom and a ⅜" one at the top.

4 Shape the handle with a band saw, and smooth the surfaces with a belt or disk sander. Drill holes at the center point of each radius. Now, insert the ½" dowel (FF) into the hole in the handle and secure it there with a #6"×½" flathead wood screw.

Assembling the Wagon

1 Start by sanding all surfaces smooth.

2 To fasten the front undercarriage to the wagon bed, center the X support between the edges of the bed, making sure the front edge of the support (the blunted end) meets the back edge of the ¾"×2¼" piece (F). Secure the undercarriage to the bed by gluing and driving #10×1¼" flathead wood screws through the bed into the X-support cross members. To avoid splitting the wood, be sure to drill pilot holes for your screws first.

From the bottom side of the bed, drill a ½" hole up through the wagon bed. Hold a block above the hole to prevent split-out of the wood.

3 Center and position the rear undercarriage in the same way. Attach this assembly through the top with six #10×1½" flathead wood screws.

4 To secure the wheels to the axles, fit a flat washer, the wheels, and a fender washer onto the ½" bolts you prepared earlier. Drive the ¼" screws into the tapped holes, then epoxy the wheel assembly in place.

Applying the Finish

1 Finish-sand all surfaces. Then, apply two coats of penetrating oil finish (we used Watco natural Danish oil finish).

2 After letting the oil dry for a few days, we applied three coats of polyurethane varnish. We also buffed between each coat with steel wool. To further brighten and protect the finish, we applied two coats of paste wax.

Final Assembly

1 To secure the handle, thread a ¼"×2" machine bolt through the strapping, nylon washers, and tongue.

2 Secure the sideboard assembly to the bed by driving #10×1¼" wood screws through the edges of the bed into the stakes. Allow a ¼" space between the bottom of the sideboards and the bed.

3 Fasten the front axle to the bed, using a ½"×7" carriage bolt. Secure the bolt with a self-locking nut.

"Capture the wind and the imagination with your own whirligig . . . built using these two books by Anders Lunde."

WHIRLIGIGS: DESIGN AND CONSTRUCTION by Anders S. Lunde (THE MOTHER EARTH NEWS, Inc.). Whirligigs are delightful toys from the past that whirl and turn in the wind. This book traces their origins and provides a large selection of traditional designs with detailed instructions and working drawings for each. 80 pages. Paperback. **66189 $6.95**

MORE WHIRLIGIGS: LARGE-SCALE AND ANIMATED FIGURES by Anders S. Lunde (THE MOTHER EARTH NEWS, Inc.). Lunde's second book on whirligigs provides scaled drawings and instructions for building such animated creations as Anne at the Pump, Pete Sawing Wood, the Windmill, Feeding Chickens, and many more, all of which can be made using inexpensive materials. Here is a marvelous bit of American history brought to life. 172 pages. Paperback. **66239 $12.95**

MOTHER'S BOOKSHELF®
Dept. 240907
105 Stoney Mountain Road
Hendersonville, NC 28791
To order, use the coupon or call us Toll Free at 800/438-0238 (NC residents call 704/693-0238).

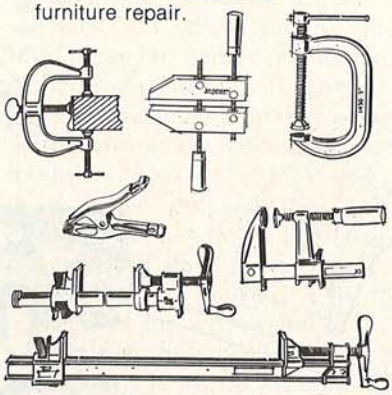
Please send me_____copies of WHIRLIGIGS: DESIGN AND CONSTRUCTION (66189) at $6.95 each.

_____copies of MORE WHIRLIGIGS: LARGE-SCALE AND ANIMATED FIGURES (66239) at $12.95 each.
Enclosed is my check or money order including shipping and handling ($1.50 for 1 or 2 books). NC residents add 4-1/2% sales tax. Add a 15% surcharge if remitting in Canadian funds, except for charge card orders.
Or charge my ☐ MasterCard ☐ VISA

Credit Card No. _____
Card Expiration Date _____
Signature _____
Name _____
Address _____
City _____
State _____ Zip _____

MOTHER'S BOOKSHELF®
105 Stoney Mountain Road
Hendersonville, NC 28791
240907
We will refund your money on any book returned undamaged within 10 days. Your books will be shipped within 72 hours after your order arrives.

"Jorgensen"® AND "Pony"®
CLAMPS
Dependable extra hands for all types of clamping and work-holding jobs: woodworking projects, home maintenance, and furniture repair.



Write for FREE LITERATURE. For big 32-page "how-to-clamp-it" catalog, send 50¢.

ASK YOUR DEALER
ADJUSTABLE CLAMP COMPANY
THE CLAMP FOLKS
410 N. Ashland Ave./Chicago, IL 60622

FREE CATALOG

Earn extra income! Make beautiful gifts! Enjoy **a fun and rewarding hobby!**
Our free 68 page catalog contains hundreds of items all at the lowest prices ever! We offer a wide range of quality products including:
- **Clockmaking and repair components**
- **Furniture and clock kits**
- **Music movements**
- **Wood toy parts and plans**
- **Lamp parts**
- **Forstner cutting bits**
- **Unique finished clocks**

. . . and much, much more!

TOLL-FREE
1-800-KLOCKIT
(556-2548)
MasterCard VISA
KLOCKIT DEPT. WD94 P.O. BOX 542 LAKE GENEVA, WI 53147
NAME _____
ADDRESS _____
CITY _____ STATE ____ ZIP _____
CALL TOLL-FREE. . . . Today!

OLD HAND WAYS

Continued from page 69

knots; otherwise they would peg the chunk firmly to the log.) You continue on down the log until all of the chunks are split off.

As it stands, this surface is quite rough. You can further level it by chopping in a more closely spaced array of scorings and then again splitting along the grain. The finishing touch is to slice down across the grain of the timber. This can be done with the felling axe, but the specialized broad axe makes the job much easier. The broad axe has a face that is virtually flat on the side towards the log. The handle is generally offset to the opposite side so that your fingers will remain attached to your hands

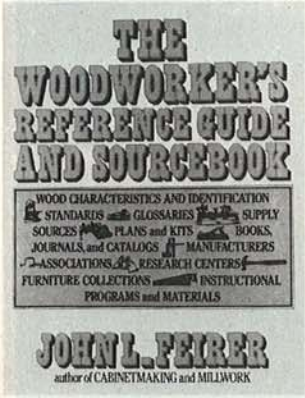
as you work. When one side is done, you do the opposite side and continue to bring it four square.

Preparing the material is the most time-consuming part of building, and hewing is only one of the means to this end. Much of the material, such as shingles, clapboards, and even studs, can be produced entirely by splitting. This is the riven stock, and it will be the next issue's challenge of The Old Hand Ways.

BOOKS WORTH READING

The Woodworker's Reference Guide and Sourcebook

by John L. Feirer.
Charles Scribner's Sons,
New York. 1983.



353 pages.
$35.00

Print this article

From the author of the woodworker's "bible," *Cabinetmaking and Millwork*, comes another outstanding book, certain to become an important part of many a woodworker's library. Feirer has compiled thousands of pieces of useful information that can help the hobbyist or professional in countless ways. The author's vast experience in the field of woodworking has enabled him to create "the most comprehensive guide to the subject ever published." The Table of Contents at right gives you an idea of the scope of this work. Feirer stresses that this is a reference book and not a "how-to" manual, but his chapter on publications and instructional materials will tell you where to find the information you may want.

Far from being simply a series of factual lists, the *Woodworker's Reference Guide and Sourcebook* is educational in its own right. Feirer spends considerable space, for example, talking about wood—its makeup, the various types available, and how to identify it. And the seven glossaries, which account for almost half of the book's pages, will certainly broaden most peoples' knowledge of the subject areas covered, and serve as a handy reference. There's little doubt that the amount and quality of information this book puts at your fingertips make the hefty $35 cover price seem more reasonable.

Table of Contents:

1. The Nature of Wood
2. Kinds of Woods
3. Identifying Wood
4. Glossaries:
   - Adhesives
   - Cabinetmaking and Millwork
   - Carpentry
   - Finishing and Painting
   - Furniture
   - Lumber
   - Plywood, Veneers, and Engineered Boards
5. Wood Standards
6. Publications and Instructional Materials
7. Sources and Resources
8. Manufacturers
9. Woodworking Plans and Kits
10. Careers and Education
11. Research Centers and Libraries
12. Trade and Professional Associations
13. Furniture Collections, Museums, and Displays
14. Conventions, Shows, and Awards

THE HEAVYWEIGHT

BUILT FOR THE PROFESSIONAL / PRICED FROM $239

The Heavyweight is entirely American-made with top-quality materials and construction. It's priced for the hobbyist, but tough enough for the professional wood worker.

A 1/2HP motor with four-step pulley provides power to spare for turning, sanding, grinding, buffing and drilling. Accessories include a complete tool turning set and a face plate and sanding disk for outboard turning.

12" Wood Lathe
Ground steel ways.
100% American-made.
Cast iron head & tail stocks.
52" long; 38" between centers.
Sealed ball bearing head stock.

Free brochure on request.

WILLIAMS & HUSSEY MACHINE CO.
Dept. 24, Milford, NH 03055
Toll-free: 1-800-258-1380 In NH: 1-673-3446

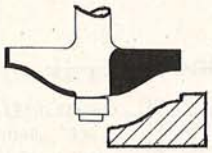
ROUTER SPECIALS

New Makita 3612BR 2HP Plunge Router $199.95 Postpaid

New model features 14 amp motor, improved ½" collet, & 3 adjustable depth stops. Handles ¼", 3/8" & ½" bits.
Optional guide holder, straight guide, and roller guide. $24.50 Postpaid.

Set of 4 Spiral End Mill Router Bits $36.00 ppd.

Excellent for mortising with a plunge router, these HSS bits can be plunged vertically like a drill bit and then moved laterally as a router bit. Clean-cutting. Set of 4 includes ¼", 5/16", 3/8" & ½". ½" shanks.



Ogee Fillet Raised Panel Router Bit $99.95 ppd.

This unique carbide router bit is excellent for all panel raising. Bit diameter is 2½". ½" shank.

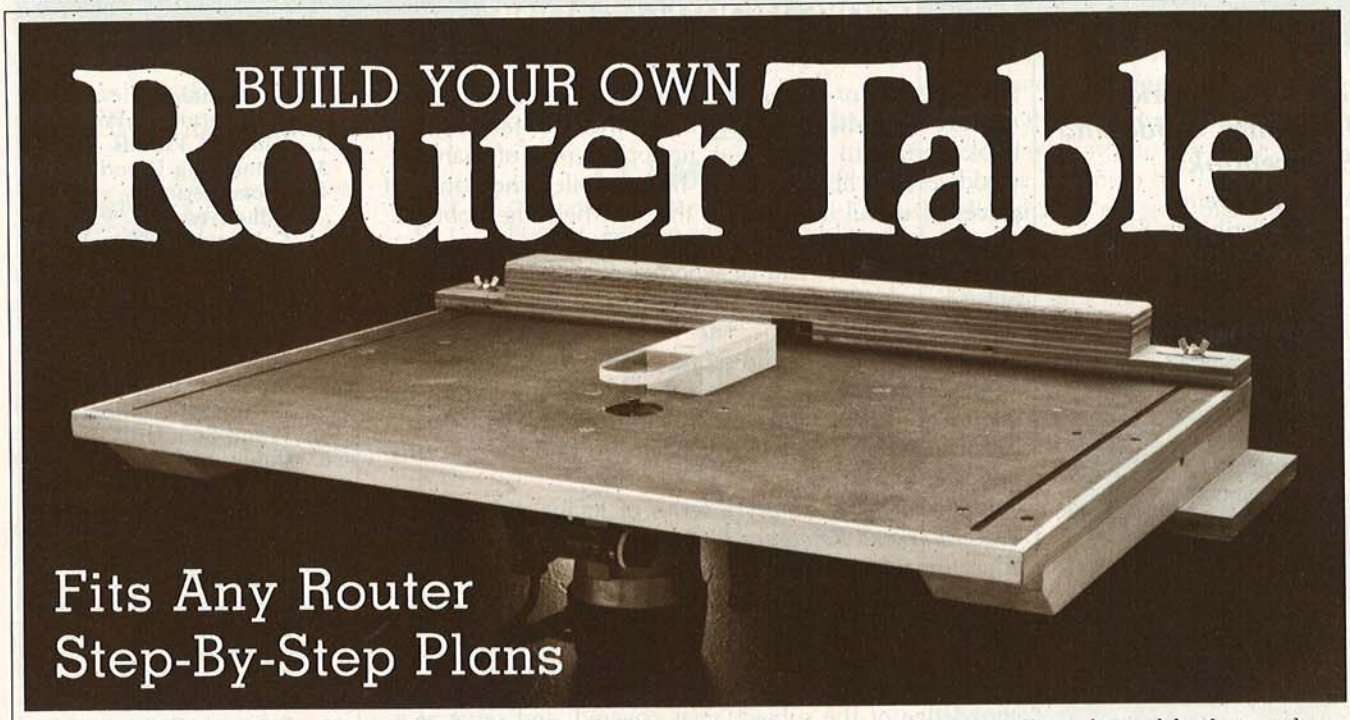
Router Handbook by Patrick Spielman.
$9.95 plus $2.50 shipping.
A comprehensive guide written to help you get the most out of your router. 224 pages. 510 photos.

highland hardware
1045 N. Highland Ave. Dept. B
Atlanta, GA 30306 (404) 872-4466

MC/Visa users outside Georgia
ORDER TOLL FREE
(800) 241-6748
(Orders Only)

Or send check, money order, or MC/Visa info to Highland Hardware. Prices are Postpaid in U.S. Send $1.00 for our tool catalog (free with order).

BUILD YOUR OWN Router Table



Fits Any Router
Step-By-Step Plans

Get the most out of your router by mounting it to this shop-tested router table. Then discover how easy it is to make molding cuts on narrow boards. Cut rabbets or grooves exactly where you want them. Even make multiple cuts for special effects. And get professional results every time.

This router table was designed and built in the *Woodsmith* shop . . . with woodworkers in mind. First of all, we designed it to accept any size router. Then we added a few things the "store-bought" models don't have:

- We made sure it had a large work surface to provide more support for large workpieces.
- Next, we added a fully adjustable fence that also acts as a guard over the router bit.
- And finally, we designed two models: a low-profile model (pictured above) that can be clamped to the edge of your workbench and still be at a comfortable work height. Or, you can add the optional stand (legs and storage cabinet) to make it a full-sized floor model.

The exclusive plans for this easy-to-build router table include step-by-step directions for both models — all in a six-page *Woodsmith* Plan Booklet. The cost? For a limited time the Router Table Plan Booklet is only $1.

Woodsmith®

PLAN BOOKLET

YES, send me the *Woodsmith* Router Table Plan Booklet — a complete six-page Plan Booklet that shows the step-by-step details for building both the bench-top model, and the full-size floor model.

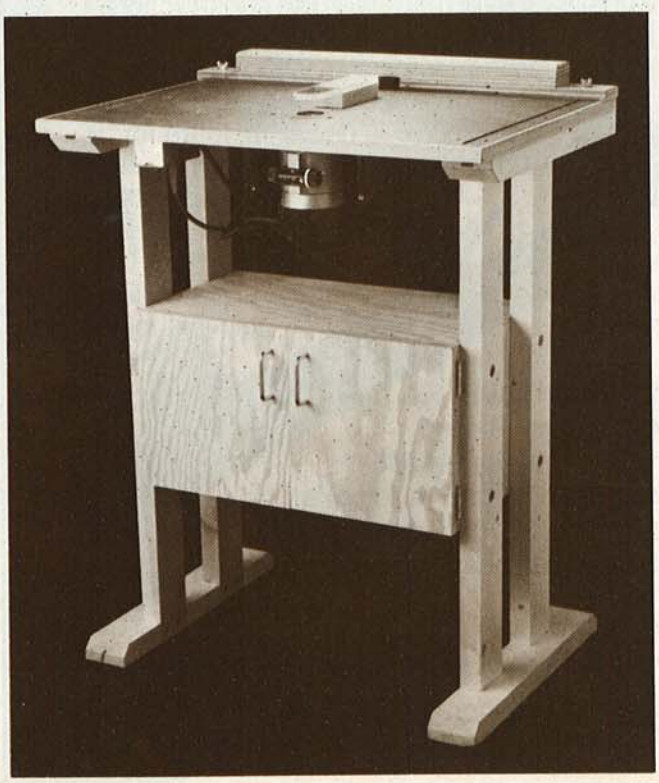
Name _____

Address _____

City _____ State _____ ZIP _____

- To get your Router Table Plan Booklet, send only $1 to: *Woodsmith*, Dept. 58, Box 842, Des Moines, Iowa 50304.

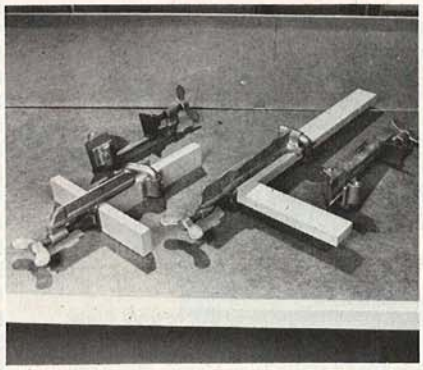
- *If you don't want to clip this coupon, just write your name and address on a piece of paper, and send it and only $1 to the address above. Ask for the Router Table Plan Booklet #58.*



PRODUCTS THAT PERFORM

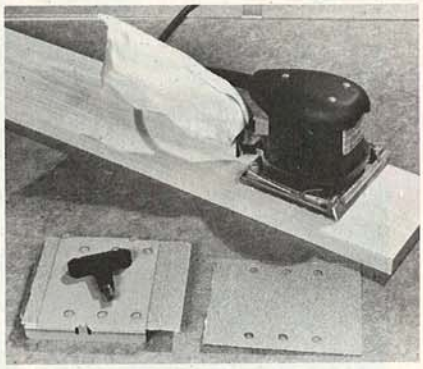
Power tool cushion

This durable, suedelike cushion sticks to the base of various tools, preventing scratches that often occur when cutting finish materials. Besides affording protection, SawGlide greatly improves the tool's gliding motion. It's easy to use; just cut it to size and stick it on.
SawGlide. In stores, about $1.99. Portalign Tool Corp., Dept. W., P.O. Box 80547, San Diego, CA 92110.



Easy Gluing Clamps

These aluminum alloy clamps concentrate pulling power on individual glue joints. Mar-free, nonstaining jaws grasp the work firmly. The UC-76 fastens to frame pieces; the UC-76A right-angled clamp, to shelves and cabinet sides.
UC-76 and UC-76A Clamps. About $15 each plus shipping, from Universal Clamp Corp., Dept. W, 6905 Cedros Ave., Van Nuys, CA 91405.



Finishing sander

Light and efficient, this sander has a 1.2-amp motor that runs at 12,000 orbits-per-minute. To use its built-in dust extractor, punch the paper (¼ of a standard sheet) with the punch and template provided. The detachable dust bag is washable.
4010 Professional Palm Grip Finishing Sander. About $79 in stores. Black & Decker, Inc., Dept. W, 626 Hanover Pike, Hampstead, MD 21074.

U.S.A. CUTTING TOOLS • NORTON ABRASIVES • MAKITA • DEWALT • BIESEMEYER • AIR TOOLS

BRATTONS' "PRICE WAR" SPECIALS

WE WILL BEAT *ANYONE'S* PRICES ANYWHERE

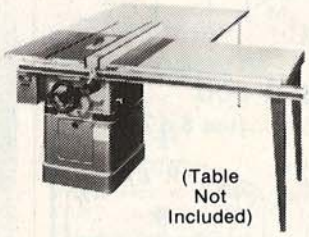
PORTER-CABLE
(Prices include freight)

Model 360
Belt Sander
(Dustless) 3 × 24
List ..... $269.
SALE ..... $199.

Model 505
Finishing Sander
4½ × 4⅛
List ..... 145.
SALE ..... 109.

Model 330
Speed-Bloc
Finishing Sander
4⅛ × 4½ 1.2 amp
List 85.50
SALE 59.00

Powermatic

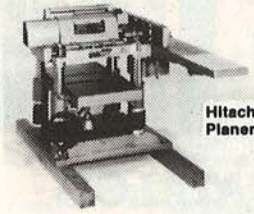


(Table Not Included)

Powermatic Model 66 with Biesemeyer Fence 10" model 66 Table Saw complete with Biesemeyer Model 50, 50 inches rt. of blade, 1 ph., 3 h.p., 230 volt, magnetic controls.
List ..... 2,157.
SALE ..... $1775.

Hitachi

	List	SALE
F1000A Planer/Jointer	1999.	**1299.**
P100F 12" Planer	1530.	**999.**
B600A Bandsaw	2300.	**1499.**
TR-12 Plunge Router	299.	**189.**



Hitachi F1000A Planer-Jointer

(F.O.B. Memphis, Tallahassee, Salt Lake City, Wilkes-Barre, PA)

Powermatic

	List	SALE
Model 66 10" Table Saw	1989.	**1659.**
Model 50 6" Jointer	1048.	**899.**
Model 60 8" Jointer	1451.	**1299.**
Model 100 12" Planer	2509.	**2299.**
Model 180 18" Planer 1 ph.	4610.	**4399.**
Model 26 Shaper	1888.	**1699.**
Model 45 Lathe 12"	2074.	**1788.**
Model 141 14" Bandsaw	1218.	**1142.**
Model 81 20" Bandsaw	2705.	**2620.**

(F.O.B. McMinnville, TN, Salt Lake City, UT)

Rockwell/Delta

	List	SALE
*10" Tilting Arbor Unisaw 3 hp	1971.	**1699.**
10" Contractor Table Saw 1½ hp	1078.	**749.**
14" Bandsaw, encl. std. ¾hp	866.	**649.**
Unifeeder Stock Feeder	566.	**475.**
Belt & Disc Sander 1½hp	1425.	**1199.**
13" RC-33 Planer, ext. std. 2hp	1914.	**1699.**
Light Duty Shaper 1hp	640.	**515.**
Sawbuck Trim Saw	676.	**525.**
15" Drill Press ½hp	451.	**365.**
**8" Jointer 1½hp	1853.	**1595**

*Includes $200 merchandise certificate
**Includes $250 merchanside certificate

BRATTON MACHINERY & SUPPLY, INC.
ATTN: Dept. FWW
1015 Commercial Street
P.O. Box 20408
Tallahassee, FL 32316
Call toll free: 1-800-874-8160
In Florida: 1-800-342-2641
Local: (904) 222-4842
Write for catalogs.
Enclose $3 for postage & handling.

POWERMATIC • ROCKWELL • HEGNER • BLACK & DECKER •

PORTER-CABLE • HITACHI • BLACK & DECKER • HITACHI •

• JORGENSEN CLAMPS • AIR TOOLS • U.S.A. CUTTING TOOLS • NORTON ABRASIVES • GREENLEE

WOODWORKING WORLD
THE CHICAGO SHOW

Friday, October 12th
2:00 p.m. - 9:00 p.m.

Saturday, October 13th
10:00 a.m. - 6:00 p.m.

Sunday, October 14th
10:00 a.m. - 5:00 p.m.

at

THE O'HARE EXPO CENTER — ROSEMONT, ILLINOIS

Everything for the Hobbyist, Professional & do it yourselfer

EXHIBITS, DEMONSTRATIONS & SALES OF:

Machinery & Power Tools — Hand Tools — Hardwoods & Veneers — Sawblades
Bits & Cutters — Abrasives — Hardware -- Stains & Finishes — Clockmaking
Supplies — Lumber Drying Systems — Magazines — Books & Plans

By Such Famous Names As

Anglo-American, Bosch, Bridge City, Buck Bros., Clipit, Creative Homeowner Press, Eagle, EBAC, Elektra-Beckham, Excalibur, Falcon, Fine Woodworking, Foredom, Forstner, Freud, General, Hegner, Inca, Makita, Marples, Mr. Sawdust Signature Line, Nu-Life, Popular Science, Porter-Cable, Powermatic, Record, Ring Master, Rockwell, Shopsmith, Spyderco, Stanley, Sterling Publishing, Strong, Time Life, Ulmia, Warren, Watco, Winchester, Williams & Hussey, WKW, Zar and

MUCH, MUCH MORE

SHOW SPECIALS AND DOOR PRIZES

FREE SEMINARS WITH ADMISSION TO SHOW

ADMISSION $5.00

ONE DOLLAR OFF ADMISSION WITH THIS AD

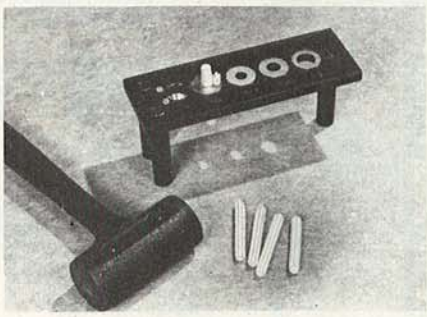
WOODWORKING WORLD CHICAGO
Sponsored by

WOODWORKING ASSOCIATION OF NORTH AMERICA

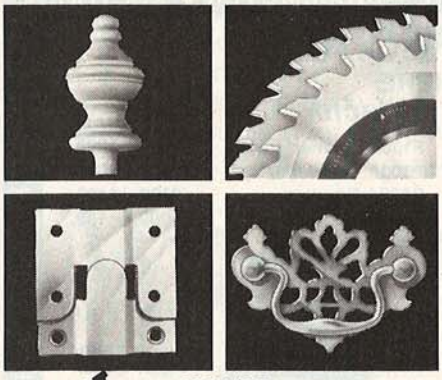
For more information regarding the show and seminars call or write the association at 35 Main St., Suite 6, Plymouth, NH 03264 Tel. (603) 536-3876

PRODUCTS THAT PERFORM

Accurate wood ring maker
Now, you can cut perfect concentric rings for bowls, lamps, and vases. Ring Master adjusts for straight or beveled rings up to 12 inches in diameter. *Ring Master. $399 with 1,725-rpm motor; $289 without; new Shopsmith-compatible Ring Master, $249; plus shipping. From Ring Master, Inc., P.O. Box 8527-A, Dept. W, Orlando, FL 32856.*



Dowel former
Dowels without veins can trap glue and air in the dowel hole, preventing a good joint. With the 887 Dowel Former, you can chamfer and vein ¼- to ½-inch dowels by tapping them through forming dies with a mallet. Dies and chamfer blades are replaceable. *887 Dowel Former. In stores, about $11.90. General Hardware Mfg., Co., Inc., Dept. W, 80 White St., New York, NY 10013.*



NEW 1984/85 CATALOG
112 Pages of Woodworking Supplies & Hardware

Enclosed ☐ $1.00 (3rd Class)
☐ $2.00 (1st Class)

Name

Address

City/State/Zip

The Woodworkers' Store
21801 Industrial Blvd. Dept. H909
Rogers, MN 55374

Walnut
Cherry
Oak
Maple
Ash, Beech
"Stix-Pac"
of
Turning Wood
just $4.95

A handy sampler of 6 of the most sought-after American hardwoods. The stock has been selected from the finest cabinet quality kiln dried squares. Each square measures 2"x2"x8", and has been stamped for easy identification. At this low price we must limit one "Stix-Pac" per customer. Orders shipped only to addresses within the continental U.S.

Beautiful wood, ready to turn and finish. Order While Supplies Last!

Mail to:
Cryder Creek Wood Shoppe Inc.
101 Commercial Avenue
Whitesville, N.Y. 14897

CRYDER CREEK

FREE

In case you were wondering what to do with all that beautiful wood...
Order now and receive the brochure "101 Small Turning Ideas" absolutely FREE. Plus...you'll receive the latest copy of Cryder Creek's catalog of turning stock and tools for the wood turner.

EXTRA

Free 10 TURNING PLANS if you order now!

☐ Yes! Rush me a "Stix-Pac" of turning squares plus my free brochure "101 Small Turning Ideas". I have enclosed $4.95 plus $2.00 shipping and handling. (N.Y.S. residents please add 7% sales tax).

Name

Address

City State Zip
10031

Your home workshop can PAY OFF ... ...BIG!

Try The Foley-Belsaw In Your Own Shop On Our **30-DAY FREE TRIAL OFFER** Mail Coupon Below For Complete Details!

This One Low-Cost Power Tool—

SAWS to desired Width...
PLANES to desired Thickness...
MOLDS all popular Patterns...

—All at once or separately... *All By Power Feed!*

The Only Complete Workshop Tool Of Its Kind In The World!

From the Day It Arrives... the Planer will make and save you money. With shortages and inflation driving lumber prices sky-high, this versatile power tool quickly pays for itself by easily converting low cost rough lumber into high value finished stock. In just one pass turn out your own quarter-round, door and window stop, casing, tongue-and-groove... all popular patterns. Other operators are making cases for grandfather clocks, furniture, picture frames, bee hives, bed slats, surveying stakes... all kinds of millwork.

Built For Pros... Priced For Home Craftsmen... it is engineered and built to industrial standards, but factory-direct selling keeps the price low. Handles tough oak and walnut as easily as pine, and so simple to operate even beginners with no experience can use it.

Start Your Own Business! Earn Extra Income Right At Home.

With just this one low cost power-feed machine in a corner of your garage or basement, you're set up to supply lumberyards, cabinetmakers, carpenters, remodelers, contractors and hobbyists in your area with custom-planed lumber, trim, molding... ALL of their millwork requirements. You can supply picture molding to art shops, hardware and department stores, or sell direct to framing shops. All standard patterns are available from stock, or we'll custom grind a knife to your own special design or sample.

You Take* NO RISK! *The Planer/Molder/Saw Is Backed by Our Exclusive 100% Guarantee of Satisfaction:

• "Try the Foley-Belsaw in your shop for a full 30-Days and put it to work for you. Give it a thorough test and make it prove that it can do everything we say it will... use it just as much as you want. Then if you are not completely satisfied, just send it back and we'll return every penny you sent. And YOU are the sole judge! There are no questions asked... there are no fine print 'use' charges. Our flat guarantee is that YOU must be 100% satisfied or you get your money back."

Does The Foley-Belsaw Pay? YOU BET!

READ WHAT OWNERS SAY:

A Good Investment • Robert Sawyer, Roseburg, Oregon: *"I believe that the Foley-Belsaw is the best investment I ever made. I've been a planer man for years and am now retired. The Foley-Belsaw has earned me $60,000 extra income in the past eleven years."*

Pays For Itself: • R.S. Clark, Springfield, Ohio: *"I bought a batch of walnut in the rough, and after planing it on the Foley-Belsaw I figured up the money I saved. It was enough to pay for two-thirds the cost of the Planer. It really does a good job."*

More Than Expected • Stephen Schultz, Orangeville, Penna.: *"This machine pays for itself by making money out of scrap boards. It is a very well built machine and I confess it is more than I really expected for the price. It does everything you say it will."*

... And Foley-Belsaw Is The Choice Of Professionals:

"I recommend Foley-Belsaw Planer-Molder-Saw as the most useful shop tool any craftsman could own. We use one every day in the Workbench model shop, and couldn't get along without it."

JAY HEDDEN — Editor WORKBENCH Magazine

FREE BOOKLET! Get FREE Book with facts and full details ... RUSH COUPON TODAY!

If coupon has been removed, just send postcard with name and address to: FOLEY-BELSAW CO. 90530 FIELD BLDG. KANSAS CITY, MO 64111

Just Mail Coupon ... NO OBLIGATION and NO SALESMAN Calls!

ACT NOW! Coupon Brings Full Details!

FOLEY BELSAW

FOLEY-BELSAW CO.
90530 FIELD BLDG.
KANSAS CITY, MO 64111

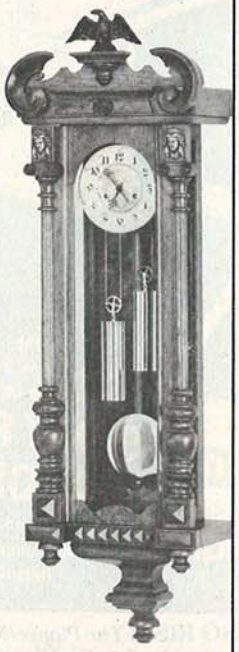
☐ **YES**, *please send me the FREE Booklet that gives me complete facts about your Planer-Molder-Saw and full details on how I can qualify for a 30-Day Free Trial right in my own shop. I understand there is No Obligation and that No Salesman will call.*

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

TURNCRAFT CLOCKS



- For the woodworker who enjoys a challenge we offer the "NEW FRIEBURG" plan as shown.
- TURNCRAFT is a leader in the clock plan industry with 35 clock plans. Ask for our FREE PLAN BROCHURE.
- 72 page CLOCK CATALOG, hundreds of clock building items. $2.50 refundable on your first $25.00 order. Add $2.00 for first class postage.
- Quartz Movements as low as $2.75 in quantities. Ask for our FREE QUARTZ BATTERY BROCHURE.

THE FRIEBURG
Plan #160
$6.50 plus $1.00 Shipping
16½" Wide, 51" High, 9" Deep

TURNCRAFT CLOCK IMPORTS CO.
7912 Olson Hwy. 55 Golden Valley, MN 55427
(612) 544-1711

Complete Detailed Plans For -
42" 4-Harness Folding Counterbalance Loom
$15.00 Postpaid
(Plans Only)

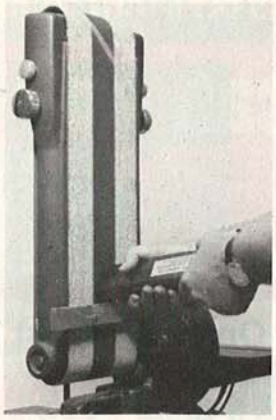
- Also Available -
Complete Kit For All Metal & Misc. Parts, Except Wood

Complete
4-Harness Counterbalance
Folding Looms, Floor Model,
Ready To Weave -

Complete
4-Harness Table Looms,
Ready To Weave -

Send For Free Information To:
TOMAR LOOMS
7711 N.W. 5th Ave.
Vancouver, WA 98665

NU-LIFE SANDING BELT CLEANER



DON'T TOSS 'EM...CLEAN 'EM!

NU-LIFE MAKES CLOGGED SANDING BELTS AND DISCS LOOK AND PERFORM LIKE NEW. CLEANS IN SECONDS!

For one introductory cleaner, send $6.00 check or money order together with your name and shipping address to:

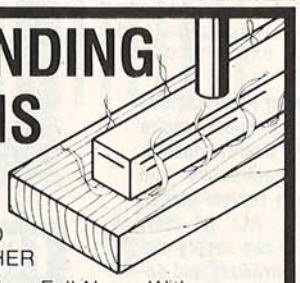
ABRASIVE SERVICE CO., INC.
398 Broad Street
Forestville, CT 06010

Money back guarantee. We will send you the name of the nearest distributor for subsequent orders.

PATTERNS for wood

Build an 1800 Trolley • Woodburning Locomotive • Horse Drawn Vehicle • Spinning Wheel • 1794 Clock • Early American Cradle • Weathervanes • Classic Toys • $1 gets our catalog of FULL SIZE patterns, Kits, Mini-Lumber, Woodburning Equipment and patterns and Books. If you order, you get your dollar back!
Criss-Cross, Box 324BY Wayne, NJ 07470

BRANDING IRONS



FOR WOOD AND LEATHER
- Brands Your Full Name With 1/8" or 1/4" High Letters

GUARANTEED
SEND FOR FREE BROCHURE
NOVA TOOL CO.
4533 Colfax Circle, **Dept. BH**
P.O. Box 29341, Lincoln, NE 68529

Wood Ship Models

Build a handsome model worthy of your time and care. Our scale model wooden ship kits contain only the finest materials for plank-on-frame and solid hull construction. Send $2 (refundable with purchase) for illustrated catalog of kits, fittings and supplies.

BLUEJACKET SHIP CRAFTERS
ESTABLISHED 1905
P.O. Box 533 · BH, Shelton, CT 06484

WIPE-ON

BEAUTIFUL WOOD FINISHING

Easy Wipe-On Techniques and Materials Explained in
FREE BOOKLET

GENERAL FINISHES
P.O. Box 14363 • Milwaukee, WI 53214

NATIVE AMERICAN HARDWOODS

WALNUT, BUTTERNUT, CHERRY
CURLY & BIRD'S-EYE MAPLE
Most Other Domestic Woods

- **EXTRA WIDE/EXTRA THICK STOCK**
- **TURNING SQUARES/BLOCKS**
- **QUARTERSAWN/BOOKMATCHED LUMBER**
- **SPALTED LUMBER/BLOCKS**
- **THIN STOCK**
- **FLOORING/PANELING**

NO MINIMUM
WHOLESALE & RETAIL

Comprehensive Listing—One Dollar (Refundable)

NATIVE AMERICAN HARDWOODS LTD.
R1, W. VALLEY, N.Y. 14171 • (716) 942-6631

BAND SAW BLADES

FINEST INDUSTRIAL QUALITY
Carefully Welded To Your Exact Specifications

WIDTHS	TEETH	PRICE/INCH
1/16"	24 and 32	$.09
1/8" thru 5/8"	3 thru 32	$.05

TO FIGURE PRICE:
Inch Length × Price Per Inch + $1.85 Weld Charge

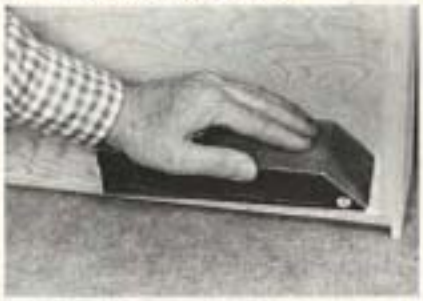
SANDING BELTS ALSO AVAILABLE
MINIMUM ORDER: $10.00
Add $2.50 for Shipping and Handling
PROMPT DELIVERY
SEND PAYMENT WITH ORDER OR WRITE FOR MORE INFORMATION TO:
BUCKEYE SAW CO.
P.O. Box 14794, Cinti., OH 45214

PRODUCTS THAT PERFORM

Nontoxic Rust Remover

Here's a solvent that won't harm you or fine tools. R_xP_x dissolves rust and oxidation on practically everything. In the process, it primes the surface with zinc phosphate. The zinc coating tends to darken tool steel with prolonged soaking. R_xP_x is nontoxic, noncorrosive, and gives off no fumes. *R_xP_x. Available retail in 8- and 16-ounce sizes, about $3.79 and $6.49. Solvo-O Corp., Dept. W, 5637 Allen Rd., Allen Park, MI 48101.*

Wedge Sanding Block



Designed to reach into tight corners without marring adjoining surfaces, the BeltPlane uses standard 3×21-inch sanding belts. A removable wedge allows for removing and securing the belt. Made of high-impact molded plastic, BeltPlane has a unique handgrip system that helps guard fingers. With appropriate belts, it works on wood, aluminum, plastic, drywall, laminates, glass, and tile. *BeltPlane, about $12.95 retail. Portalign Tool Corp., Dept. W, P.O. Box 80547, San Diego, CA 92138.*

Mortise-and-Tenon Router Jig

Mortise-and-tenon joints are difficult to make. Now help is here. Morten The Jig allows you to rout perfect mirror image joint halves without measuring. With this heavy-duty assembly, even haunched, mitered, and multiple joints take only a few minutes. All you need to do the job are a router, a ⅝-inch guide bushing, a ¼-inch straight bit, and Morten The Jig. *Morten The Jig. Price is $39.95 plus $3 shipping from Peterson's Specialty Products, Dept. W, 764 Grant, Loveland, CO 80537.*

Swift-cutting German Saw

Blade teeth electric-hardened beyond the setting point eliminate need for resharpening the Softcut 2002. The 22", spring-steel blade has five bevel-sharpened, double-edge teeth to the inch for swift, smooth, no-bounce sawing. Handle is of tough, temperature-resistant ABS plastic and features 90 and 45-degree marking guides in line with the blade. A lifetime guarantee is included. *Augusta Softcut 2002 Hand Saw. $18.95 retail. Imported by Raki International, 190 Blydenburgh Rd., Central Islip, NY 11722.*

RING MASTER

"The second new idea in power woodworking to come along in 100 years."

Cut Perfect Rings In Any Wood...
any angle, any size up to 1" thick, 12" diameter.

1

Cut flat wood into angle or straight-edged rings, stack the rings and create ANY HOLLOW CYLINDRICAL SHAPE...Just glue, sand and finish...create matched sets of items.

Ring Master is simple to operate. Only 2 adjustments to set up, 3 operating steps to cut rings.

In just two years Ring Master is the center of attention in SCHOOLS, BUSINESS, and HOMES, AND is a welcome profit-maker for many –

NOW Ring Master Model 2 works on your **Shopsmith® Mark V, OR SIMILAR MACHINE** – attaches in 15 seconds.

2

Mr. B.W.H. of Santa Barbara, Cal. recently wrote about the Model 2: "Ring Master – is a new and fantastic machine – it fit(s) on the Shopsmith, it has simplicity and durability incorporated into it – I find it a tremendous addition to my woodworking shop."

3 To request a color brochure or to order – PHONE TOLL FREE 1-800-854-9815, in Florida 305 859-2664. We honor Visa, Master Card, personal check and COD.

Ring Master, Inc.
P.O. Box 85278, Orlando, FL 32856, 305/859-2664
Please send me complete facts about the ALL NEW Ring Master.
Name _____
Address _____
City _____ State _____ Zip _____
Ring Master DEALERS wanted in all areas.

FREE SANDING BELTS

DIRECT FROM THE MANUFACTURER

GET SIX FREE BELTS FOR EACH DOZEN ORDERED. All belts are aluminum oxide first quality. Our electronic presses make smooth bump-free splices.

Check your size and how many dozen. We will ship assorted grits unless otherwise specified.

- ☐ 1" x 30" — $12.70/doz.
- ☐ 1" x 42" — 12.75/doz.
- ☐ 1" x 44" — 12.80/doz.
- ☐ 3" x 18" — 13.75/doz.
- ☐ 3" x 21" — 14.25/doz.
- ☐ 3" x 23¾" — 14.70/doz.
- ☐ 3" x 24" — 14.75/doz.
- ☐ 3" x 27" — 15.25/doz.
- ☐ 4" x 21¾" — 16.75/doz.
- ☐ 4" x 24" — 17.25/doz.
- ☐ 4" x 36" — 20.95/doz.
- ☐ 6" x 48" — 26.95/½ doz. (3 FREE)

Other size belts on request.

9" x 11" Paper Sheets

A/O Cabinet Paper

	50/pk.	100/pk.
40-D	☐ $17/pk.	☐ $31/pk.
50-D	☐ 16/pk.	☐ 28/pk.
60-D	☐ 15/pk.	☐ 26/pk.
80-D	☐ 14/pk.	☐ 24/pk.
100-C	☐ 13/pk.	☐ 22/pk.
120-C	☐ 13/pk.	☐ 22/pk.
150-C	☐ 13/pk.	☐ 22/pk.

No Load Finishing Paper

	50/pk.	100/pk.
180-A	☐ $11/pk.	☐ $19/pk.
220-A	☐ 11/pk.	☐ 19/pk.
280-A	☐ 11/pk.	☐ 19/pk.
320-A	☐ 11/pk.	☐ 19/pk.
400-A	☐ 11/pk.	☐ 19/pk.

Wet or Dry S/C Paper

	50/pk.	100/pk.
220-A	☐ $15/pk.	☐ $25/pk.
320-A	☐ 15/pk.	☐ 25/pk.
400-A	☐ 15/pk.	☐ 25/pk.
600-A	☐ 15/pk.	☐ 25/pk.

NEW ITEM!
☐ BELT CLEANING STICK - $6.95

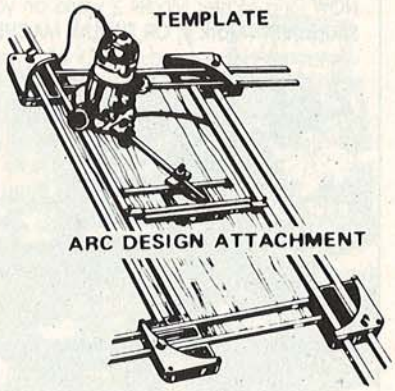
Prompt delivery from stock.
MONEY-BACK GUARANTEE

Shipping Charges - Under $35 add $2.50; $35 or more add $4.00—PA residents add 6% sales tax.

☐ Check or Money Order.
☐ MasterCard ☐ VISA Exp. Date _____
Acct. # _____
Name _____
Address _____
City, State & Zip _____

CALL TOLL FREE
1-800-428-2222
PA Only - 1-800-222-2292

INDUSTRIAL ABRASIVES CO.
643 North Eighth Street
Reading, PA 19603



COUNTLESS DESIGN COMBINATIONS

On panels, cabinet doors and drawers of all sizes ...quick, professional results every time with the **WING M-100 ROUTER TEMPLATE and the ARC DESIGN ATTACHMENT.**

BASIC TEMPLATE $139.00

ARC DESIGN ATTACHMENT $78.00

WING SALES & DISTRIBUTING CO. INC.

918 E. Cedar Lane
P.O. Box 1360
Payson, Arizona 85547
(602) 474-5836
(602) 474-3036

Make Clocks Easily! with Precision Quartz Movements

M88 Thinline
2-3/16" square x 5/8" thick
Step sweep hand. Uses AA cell.

Made in Japan by the world's largest producer of quartz timepieces.

NEW LOWER PRICES!

1-2	$6.95	25 @ $3.95	50 $3.65
3-9	$4.95		***FREE HANDS***
10-24	$4.35		

PRICES INCLUDE HOUR AND MINUTE HAND. ADD 25¢ FOR SECOND HANDS.
Add $2.00 per order for postage & handling.

BOOK - How You Can Make Battery Operated Clocks...Easily. 64 Pages. Fully Illustrated. By Charlie Plumb $6.95

NEW CATALOG
50 pages of clock movements, dials, accessories, hands, tools, and more!
Catalog #784 $1.00
(Free with order)

Cas-Ker Co.
BOX 2347-R CINTI, OH 45201
PHONE (513) 241-7073

SOUND ADVICE

Continued from page 14

POWER TOOLS

ally, consumer tools have sleeve bearings. For pro tools, manufacturers use better-quality ball bearings to a greater extent to reduce the amount of lateral movement and vibration.

Gears. Often, a heavy-duty tool has wrought-steel gears, which are heat-treated to harden the metal. With some consumer tools, powdered-metal gears are used because they're less expensive.

Housings. Unless you know plastics, it's difficult to tell the difference between the materials used on pro tools and their consumer counterparts. Super-tough nylon often sheathes the former, and consumer tools have a less durable plastic covering.

Metal housings differ, too. The professional has mating surfaces that have been machined to fit against the motor housing. The consumer model is diecast with minimal machining.

Assembly. The major components of pro tools interlock with one another. With consumer tools, the components often are held together with one set of screws.

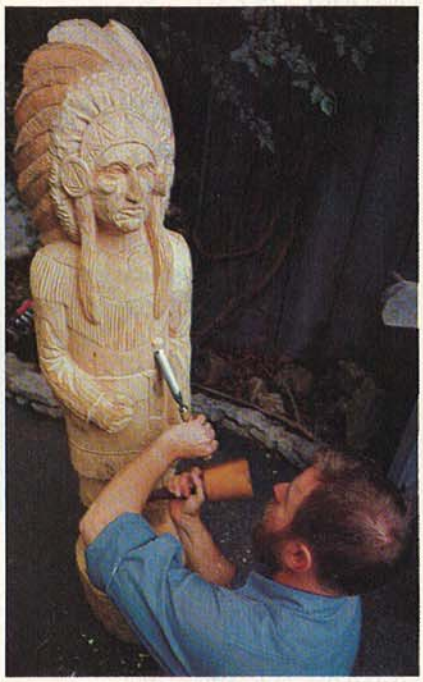
Safety. No matter which type of equipment you buy there are certain maintenance procedures you'll want to follow for safety as well as extended tool life.

All electrical power cables should be in good repair, without frays, breaks or loose plugs. If your home workshop outlets aren't the three-prong type, always use a grounding plug adaptor.

If tools aren't self-lubricating, follow the instructions in the manual to lubricate them at regular intervals.

And keep blades sharp. Dull blades can be dangerous as well as ruinous to work.

news and events



This space is reserved for information about regional and national woodworking events that are open to the public, and for news items of interest to readers. The November/December issue will cover events occurring between November 1 and December 31; the January/February issue, events between January 1 and February 28; and so on. We need your information a minimum of three months before the publication date.

Print this article

September 22–October 28
(except Tuesdays.)

Fall National Crafts Festival

Location: Silver Dollar City, near Branson, Missouri.

Admission: Adults, $12.95/single day; children, $10.95. For a second consecutive day, $3.00.

Set against the backdrop of the 1880's aura of Silver Dollar City, this festival is a must for anyone interested in the old, original tools, methods, and materials used by craftsmen during the late 19th century.

Of the 80 or so crafts being demonstrated, about a quarter of them relate to woodworking. You can watch craftsmen and women make barrels, fiddles, dulcimers, carved gunstocks, treenware, shakes and shingles, decoys, toys, chairs, baskets, music boxes, and cedar trunks, among other things.

This year's event will pay tribute to wood carving, especially the carving of wooden Indians. You'll be able to see 40 wooden Indians, and watch as carvers take them through the various stages of completion.

A couple of our staff have been to this festival in past years, so it's one we can heartily recommend as being worth your time. In addition, Silver Dollar City is situated in the rolling, forested hill country of the Ozarks. There are plenty of lakes nearby offering hiking along the shores, boating, and some of the best bass and crappie fishing.

To obtain more information, write National Festival, Silver Dollar City, Marvel Cave Park, MO 65616. Phone 417/338-8210.

September 21–23

The Woodworker

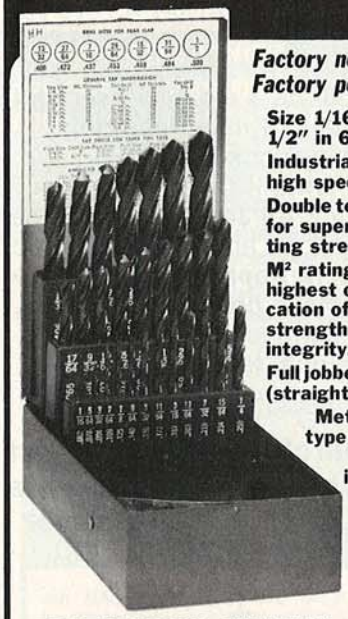
Location: 103rd Engineers Armory
3205 Lancaster Ave.
Philadelphia, PA 19104

A resource market for fine woodwork of all types, juried show, demonstrations, merchandise sales.

To obtain more information, write or phone Richard Rothbard, P.O. Box 30, Sugar Loaf, NY 10981. Phone 914/469-2248.

Continued on page 96

MUST LIQUIDATE
AT FAR BELOW DEALER COST
29-pc. High Speed DRILL BIT SET



Factory new! Factory perfect!

Size 1/16" thru 1/2" in 64ths.
Industrial grade high speed steel.
Double tempered for superior cutting strength.
M² rating. The highest classification of drill strength and integrity.
Full jobber length (straight shank).
Metal index type storage case is included.

PROFESSIONAL QUALITY!

These are NOT ordinary, run-of-the-mill drill bits! These are made of industrial grade high speed steel . . . especially hardened at high furnace temperatures for super strength and dependable cutting power. You can rely on all 29 drill bits (sizes 1/16" thru 1/2") in this set to bore clean through tough metals, time after time, without the need of frequent sharpening.

All 29 drill bits are individually housed and organized in a convenient metal case. Lift up the hinged lid and the 3 indexed rows of drill bits rise up for your easy selection. No more fumbling around to find the exact size you want. Case is 8¼"L x 4⅜"W x 2"H.

Manufacturer's Suggested Retail
$75.95
OUT THEY GO AT ONLY:
$29

Price subject to change after 60 days. Offer void outside original 48 states.

Credit card members can order by telephone:

Toll-Free: 1-800-328-0609
If busy signal or no answer, call: **1-800-328-5727**
In Minnesota, call: **1-800-742-5685**

C.O.M.B. CO. / Liquidators Dept. F-633-61972
14605 28th Avenue N. / Minneapolis, Minn. 55441

Send ____ 29-pc Drill Bit Set(s) at $29 per set plus $4.25 per set for shipping and handling. (Minnesota residents add 6% sales tax. Allow 3-4 weeks for delivery. Add 2-3 weeks extra if paid by check. Sorry, no C.O.D. orders.)

☐ My check or money order is enclosed.
Charge: ☐ MasterCard® ☐ VISA ☐ Am. Ex. ☐ Diners Club
Acct. No. _____ Exp. _____
PLEASE PRINT CLEARLY
Name _____
Address _____
City _____
State _____ ZIP _____
Phone _____
Sign here _____

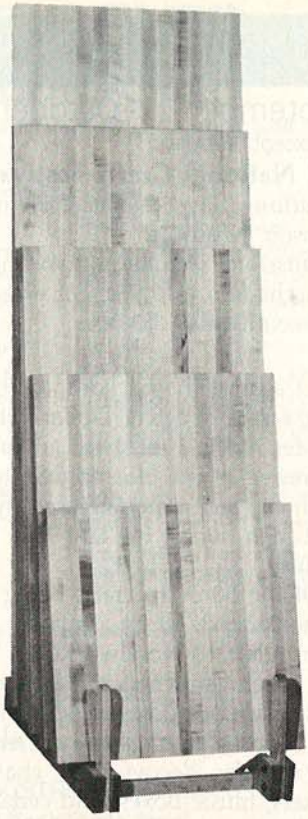
C.O.M.B. CO.®
Authorized Liquidator
14605 28th AVENUE NORTH
MINNEAPOLIS, MINNESOTA 55441

Copyright 1984 C.O.M.B. CO.

Solid Butcher Block Tops

John Boos & Co. has been in the business of manufacturing Butcher Block since 1887. We know what it takes to build a fine product. All John Boos Butcher Block Tops are solid Hard Rock Maple or Appalachian Red Oak. They make great counter tops, work benches, cart tops, occasional tables and can be used anywhere in the home.

To purchase the very best in Butcher Block Tops, write for the John Boos dealer nearest you.



John Boos & Co.

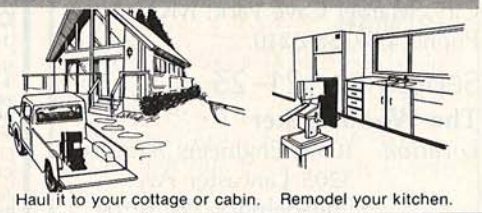
315 South First Street • Effingham, Illinois 62401 • 217-347-7701

The complete woodworking machine... and you only pay for ONE motor.

Swing from bandsaw to table saw in seconds.

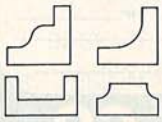
Table Sawing

Band Sawing



Haul it to your cottage or cabin. Remodel your kitchen.

Make Your Own Molding



Disc Sanding

This versatile unit is 4-tools-in-one with a powerful 2.5 hp motor. It requires no disassembly or lengthy set-up to perform different operations. You can perform 8 other operations by adding optional accessories to the same base unit. It's portable and affordable...why buy a different tool for each function when you can do it all on the Multi-purpose Star 2000!

Add a lathe and much more... call or write today about this amazing machine.

1-800-521-8289

In Ohio Dial Direct 614/445-8382

emco★USA Dept. BW-94S P.O. Box 07795 Columbus OH 43207

NEWS AND EVENTS

Continued from page 95

September 22

Decoy and Wildlife Show

Location: Music Pier
Ocean City, NJ

For more information, write Ocean City Recreation Center, P.O. Box 570, Ocean City, NJ 08226.

October 5–7

Wildfowl Carving and Art Exhibition

Location: Civic Center
Civic Ave.
Salisbury, MD 21801

Admission: $3.50/person.

To obtain more information, write or phone The Ward Foundation, Inc., 655 S. Salisbury Blvd., Salisbury, MD 21801. Phone 301/742-4988.

October 6

The Ward Foundation Fall Seminar on the Decoy

Location: Will be an on-location site. Contact the Ward Foundation for further details. (Address and phone number listed in the entry above.)

October 11–14

Early American Industries Association Fall Meeting

Location: Capitol Plaza Holiday Inn
Sacramento, CA

Admission: Full membership is $15/person or $22.50 for 2. You may join at the door.

To obtain more information, write Roger Phillips, President, EAIA West, 133 E. Santa Anita Ave., Burbank, CA 91502.

October 18–20

Midwest Tool Collectors Association Fall Meeting

Event will include tool swap, seminars and tool displays.

Location: Wilson Lodge
Oglebay Park
Wheeling, WV

To obtain more information, write Ray Nissen, Foxfire Village, RR 1, Box 961, Jackson Springs, NC.

NEW CIDER PRESSING MADE EASY!

Don't waste those apples! Making your own cider and other natural juices is so easy and enjoyable everyone at your place will want a turn at this sturdy SOLID MAPLE Cider & Wine Press. Make gallons of sparkling fresh cider with amazing ease. The taste is beyond compare! Make cider for freezing, make hard cider and wines. SEND TODAY for FREE facts about the Genuine Jaffrey Press — offered fully assembled or in low-cost kit form.

Jaffrey Mfg. Co. P.O. Box 421W Jaffrey, NH 03452

WOODWORKING ASSOCIATION OF NORTH AMERICA

THE FIRST INTERNATIONAL WOODWORKING ASSOCIATION
" ...dedicated to the advancement of woodworking as an industry, a hobby & as an art."
YEARLY DUES $15.00 / $18 CANADIAN

WOODWORKERS DO IT WITH A FINE FINISH

T-SHIRTS (S, M, L, XL) $7.00 — SHOP APRONS $9.00 — BUMPER STICKERS $2.00

Include $1.00 Postage and Handling per Item

WOODWORKING ASSOCIATION OF NORTH AMERICA
35 Main Street, Suite 6 Plymouth, NH 03264 (603) 536-3876

DOVETAILS MADE EASY!

Large, through dovetail joints cut with the Keller router templates and carbide bits. The proven system for 5/8" to 1 1/8" stock, unlimited widths: always fast, accurate and foolproof.

Keller Dovetail Templates
Box 800
Bolinas, CA
94924

SAVE $100'S ON STORAGE BED!

FULL-SIZE PLANS FOR 3 SIZES

Twin, full, or queen size bed with either 3 or 6 drawers; and with easy disassembly of headboard and footboard. Plans for all 3 sizes on Money-back Guarantee: Only $11. Send for FREE illustrated catalog of furniture plans.

FLEXIPLANS Dept. GA
48 Lowell St., Westwood, N.J. 07675

CUT PERFECT CIRCLES (without pivot hole)

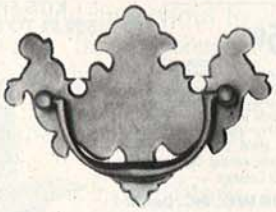
with *RADIAL ARM, TABLE* or *BAND SAW*
New, improved device locks in miter groove or clamps to wood table. Cut circles from 3 to 48 inches in diameter from any thickness wood or plastic without a center pivot hole. "Circ-L-Cut" is only **$15.20 PPD.** Illustrated instructions included. **Money back guarantee.**

HEPP INDUSTRIES, INC.
Box A154, BHW-1, Wantagh, N.Y. 11793

HORTON BRASSES

Nooks Hill Road, P.O. Box 120J
Cromwell, CT 06416 (203) 635-4400

HORTON BRASSES are authentic copies of 17th, 18th, 19th & early 20th century pulls



Mfrs. of Cabinet & Furniture Hardware for Homes & Antiques.
Send $2.00 for a Catalogue.

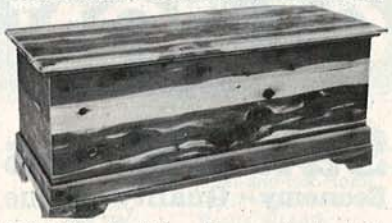
WARREN TOOLS GIVE YOU THE EDGE

Send **$28.25 Ppd.** for this complete set of carving tools and experience the pleasure of wood carving at its finest. Or send 60¢ for complete catalog.

Send Check or Money Order to:

Warren Tool Co., Inc.
Rt. 1 Box 14-A, Dept. BH&G-W,
Rhinebeck, NY 12572

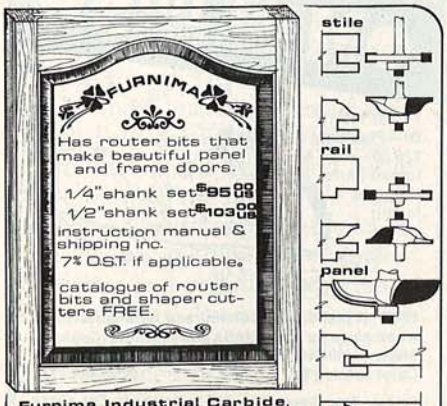
CEDAR CHEST PLAN



Build this traditional hope chest which measures 48" long x 20" high x 19½" deep. Step-by-step plan includes directions and photos. Catalog pictures 700 other woodworking projects.

CEDAR CHEST #572 ..... $3.95 (incl. postage)
Catalog ..... $1.95 (incl. postage)

U-BILD, Box 2383, Dept. 9811, Van Nuys, CA 91409

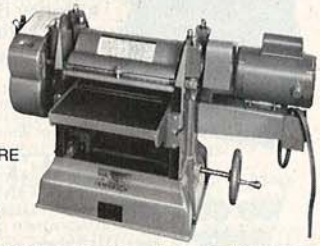


Furnima Industrial Carbide,
Biernackie road, P.O. Box **308**,
BARRY'S BAY, ONTARIO.
K0J 1B0 ph(613)756-3657

PARKS NEW MODEL 98

Compact, Ready-to-Run 12" X 4" Planer

MADE IN AMERICA



FREE LITERATURE

The best investment for your shop with these built in values:

- PARKS "Full Power" drive motor permits full 1/8" deep cut on the widest boards
- Cast Iron Construction
- Steel Feed Rollers and Bed Rollers
- Ball Bearing Cutterhead
- Microblade Adjustment
- And Much More...

Send for the latest catalog and price information.

PARKS WOODWORKING MACHINE CO.
1501 Knowlton Street/Cincinnati, Ohio 45223 Dept. BHG
Manufacturing quality woodworking machinery since 1887

Get Into The Woods With Us

EDLCO

School Shop Suppliers For 33 Years

Now Serving Craftsmen • Cabinet Makers

Top Grade Hardwoods

Appalachian & Imported

Softwoods • Veneers Turnings

All Kiln Dried

Catalogue $1.00 Write Today

EDLCO

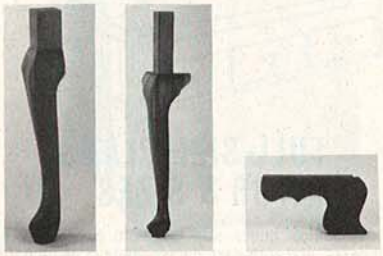
P.O. Box 5373 W
Asheville, N.C. 28813

Call (704) 255-8765

EDUCATIONAL LUMBER CO., INC.

FURNITURE KITS

Unique Queen Anne and Chippendale furniture kits of solid walnut, cherry and Honduras mahogany. Handsomely carved cabriole legs for your woodworking projects. For a color brochure send $1.00 to:



Windsor Classics, Ltd.
15937 Washington St. Dept. C1
Gurnee, IL 60031

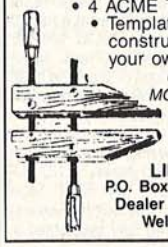
LINCOLN CLAMP KIT

"Build Your Own Clamps At A Fraction Of The Cost"

14" Jaw Length — Jaws Open to 10"

DO IT YOURSELF KIT INCLUDES:

- 2 - 3/8 ACME Threaded Rods
- 2 Spring Pins
- 4 ACME Threaded Swivel Nuts
- Template and simple instructions for constructing jaws and handles from your own wood.



CUSTOM MADE CLAMPS ARE MOST ADAPTABLE TO YOUR JOBS

TO ORDER SEND

$8.50 PPD to

LINCOLN TECHNOLOGIES
P.O. Box 3343 / Farmington Hills, MI 48018

Dealer Inquiries Welcome — **Satisfaction Guaranteed**

National Carvers Museum

LEARN WOODCARVING AT HOME

Receive sample instructional pack on whittling and woodcarving. Includes copy of *Mallet* monthly magazine.

Send $1.00 to The National Carvers Museum, 14960 Woodcarver Rd., Monument, CO 80132.

BUILD YOUR OWN POWER TOOLS

METAL PARTS KITS AT LOW FACTORY DISCOUNT PRICES FOR:

- 12-IN. BAND SAW
- 18-IN. BAND SAW
- 10-IN. TILT/ARBOR SAW
- COMB. DRILL PRESS-LATHE
- 9-IN. TILT TABLE SAW
- 6-IN. BELT SANDER
- SPINDLE SHAPER

SAVE $50 TO $500

Sold for 38 Years.

98,000 in Use.

PLANS Full Size Patterns **$5.00** per plan Deductible

KITS FROM $39.99 TO $194.99

Featured in Workbench, Popular Science, Mechanics Illustrated, Family Handyman. Step-by-step plans, photos, full-size patterns show how. No machining, no welding. *5-Year Full-Service Guarantee.* Send $5 for plans plus $1 for postage, stating tool plans wanted. Catalog included. Or, send $1 for Catalog!

GILLIOM MFG., INC., Dept. W-9
1700 Scherer Pkwy.
St. Charles, MO 63303

OLSON

Saw Blades

Economy • Quality • Value

You could pay 50 to 100% more and not get better blades. Made from the finest steels with sharp, filed or precision ground teeth for accurate sawing, smooth finishes, and long life. For cutting wood, plastic, or metals in industrial, school, and home workshops.

Send for FREE specification and price sheets.

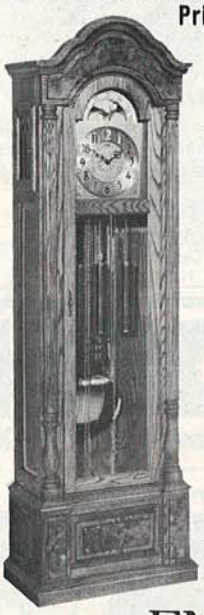
YES! I am interested in more information on these Olson Saw Blades: ☐ Band saw (wood and metal cutting), ☐ Coping ☐ Jig ☐ Saber ☐ Fret ☐ Scroll.

Name _____
Company _____
Street _____
City _____
State _____ Zip _____

THE OLSON SAW COMPANY
A DIVISION OF BLACKSTONE INDUSTRIES, INC
Bethel, CT 06801 • (203) 792-8622

FREE COLOR CATALOG

Build Your Own Grandfather Clock
Prices Starting Under



$300

(including movement and dial)

- Do-it-yourself case kit, parts pre-cut
- Finished clocks
- Solid 3/4" hardwoods: black walnut, cherry, oak
- Heirloom quality
- Factory direct prices
- Solid brass West German chiming movements
- Money back guarantee
- Prompt shipment

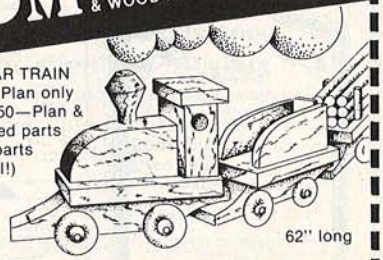
MASTERCARD, VISA and DINERS CLUB ACCEPTED

Call or Write:

EMPEROR® CLOCK COMPANY
WORLD'S LARGEST MANUFACTURER OF GRANDFATHER CLOCKS
Dept. 1231, Emperor Industrial Park
Fairhope, Alabama 36532
Phone 1-205-928-2316
IN CANADA: Emperor Clock Corporation, Dept. 1231
1081 Meyerside Dr., Suite 7 • Mississauga, Ontario L5T 1M4

MAKE TOYS & WOOD PROJECTS

7 CAR TRAIN
$6—Plan only
$26.50—Plan & turned parts (92 parts in all!)



62" long

100's of plans, kits, colored and unfinished hardwood parts for toys, crafts and furniture (Colonial, Shaker, primitive & modern). Bulk Prices available. Color catalog $1. (614) 484-1746

Cherry Tree Toys, Box 369-9, Belmont, OH 43718

paste stain and varnish — a tough finish that goes on easily

Print this article

Polyurethane varnish as thick as petroleum jelly—you wipe it on with a rag for a fool-proof finish

No question about it — if you want the toughest possible clear finish on a project, polyurethane varnish is the way to go. It's hard, lustrous, and impervious to alcohol and water. But it is some trouble to apply. You have to mess up a brush, worry about runs and sags —and then there's the dust problem.

Paste varnishes and their companion products, paste stains, avoid all these problems while still giving you all the advantages of a polyurethane finish. We've been seeing them in the woodworking catalogs, and decided to order some to give them a try.

The three brands we tested are Velvit Poly-Gel Varnish, Heritage Paste Varnish and Stain, and Bartley Paste Varnish and Stain. We made up some wood samples—hunks of oak, maple, and pine—and applied the stains and varnishes according to the directions. For comparison, we also finished a sample in satin polyurethane—brushed on.

All three paste varnishes are simple to apply. You just wipe them on with cheesecloth, applying a light, smooth coat. The two stains we tested are just as easy. They go on smoothly and cover evenly. Between coats of varnish, we buffed off the samples with steel wool, then wiped on a second coat.

In our dusty shop, the paste varnishes came out as smooth as a carefully applied brushed-on and hand-rubbed finish. The brushed-on polyurethane, on the other hand, was full of dust.

There was some variation in the degree of yellowing or warm tone the varnish gave to the wood. The brushed-on finish and the Poly-Gel were the closest in color to the natural wood. Heritage was the warmest, with the Bartley varnish falling somewhere in between.

After the samples were thoroughly dry, we gave each a coat of paste wax. Then, to test them for durability, we dribbled both water and alcohol on all the samples, letting them stand until dry.

This torture test did show up some differences between paste varnish samples and the brushed-on polyurethane. There was some

Continued on page 101

Woodworkers' Hardware ORDER FORM

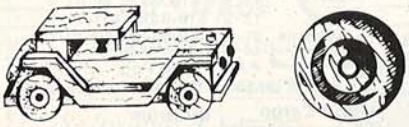
Qty. Total

Birch Mug Peg $ .37/ea. $ .22/ea.
Birch Shaker Peg $ .42/ea. $ .25/ea.
Birch Furniture Spindles 6 inch $.70/ea. $ .42/ea.
8 1/2 inch $ .85/ea. $ .51/ea.
2 inch #S4 Galley Spindle $2.50/10 $1.50/10
Wood Wheels 3/4" $5.95/C $3.57/C
7/8" $7.95/C $4.77/C
1" $8.33/C $5.00/C
1 1/4" $13.35/C $8.01/C
1 1/2" $18.35/C $11.01/C
2" $30.00/C $18.00/C
#AP1 Axle Peg Fits 1" to 2" Wheel $6.95/C $4.17/C
Wood Cargo Milk Can Oil Drum Pickle Barrel
Oil Drum $3.85/10 $2.31/10
Milk Can $3.00/10 $1.80/10
Pickle Barrel $3.85/10 $2.31/10
Screw Hole Buttons 3/8" $2.90/C $1.74/C
1/2" $2.95/C $1.77/C
Dowel Pins 3/8"x2" $2.95/C $1.77/C
Wood Knobs w/Screws 3/4" $1.50/10 $.90/10
$12.95/C $7.77/C
1" $2.40/10 $1.40/10
$21.40/C $12.84/C
1 1/4" $2.50/10 $1.50/10
$23.00/C $13.80/C
1 3/4" $3.70/10 $2.20/10
$34.65/C $20.79/C
Saw Tooth Hangers $6.95/C $4.17/C
Picture Hanger $7.95/C $4.77/C
Clock Movements w/Hands Q72 $10.80/ea. $6.48/ea.
$49.50/5 $29.70/5
Lazy Susan Bearing 3" $1.15/ea. $ .69/ea.
4" $1.60/ea. $ .96/ea.
6" $2.89/ea. $1.73/ea.
Brass Plated Candle Cup $5.00/10 $3.00/10
$49.00/C $29.40/C
Coat and Hat Hook $2.79/ea. $1.67/ea.
Brass Wreath $8.50/10 $5.10/10
Brass Anchor $5.50/10 $3.30/10
Brass Plt. Eagle #878 $3.60/10 $2.16/10
Escutcheon Pins Brass Pins for Above $ .95/C $ .57/C
#928 Butt Hinge $2.80/10 $1.68/10
#F124 Screw for Above $4.00/C $2.40/C
Clipboard Clips 3" $ .59/ea. $ .35/ea.
6" $ .99/ea. $ .59/ea.
Plastic Shelf Pins $9.00/C $5.40/C
Note: C = 100

☐ Catalog $1.00 or free with order Total Order
☐ Minimum Order is $25.00 MN Res.- 6% Tax
Order Amount: Shipping: Shipping
$25.00 to $49.99 $3.50
$50.00 to $99.99 $4.50
Over $100.00 $5.00
Total Enclosed
☐ Visa ☐ Master Card
MONEY BACK GUARANTEE!
Alaska, Hawaii, Canada & APO Orders Add $6.00
SIGNATURE
CARD NO EXP DATE
NAME
ADDRESS CITY
STATE ZIP PHONE ( )
MEISEL HARDWARE SPECIALTIES
P.O. Box 258R Mound, Minnesota 55364

TOYMAKERS FREE!

Largest toymaker's selection in US! Send for free price list of 210 toy parts, patterns, wheels, kits, books, dowels, supplies, plus toymaker's newsletter. Learn how to create 100's of unusual toys for fun or profit! *Hurry!* Get in on the action now! Special starter offers included. Send for free information now!



Morgan Toy Supplies, Dept. WO6B01
1123 Bardstown Rd., Louisville, Ky. 40204

"MAKER'S MARK" BRANDING TOOL

NOW! Brand your own name permanently on wood and leather handcrafts! Simple to use. Long lasting U L approved electric handle. Brands full name. Guaranteed.

CRAFTMARK PRODUCTS, INC.
P.O. BOX 6308BH9 • Marietta, GA 30065

If you would like more information about advertising in *Wood*, contact:

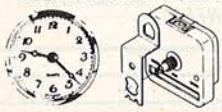
Jerry Kaplan
750 Third Avenue
New York, NY 10017

212-551-7099

CLOCK COMPONENTS

QUARTZ CLOCK MOVEMENTS

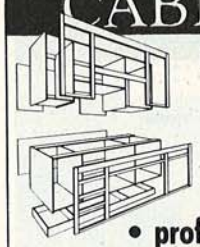
WE FEATURE BATTERY, PENDULUM, CHIME QUARTZ MOVEMENTS OF ALL TYPES. URGOS, HERMLE, GRANDMOTHER, GRANDFATHER CABLE DRIVE AND CHAIN DRIVE, KEY WIND MOVEMENTS OF ALL TYPES. 400 DAY CLOCKS, MUSIC BOX MOVEMENTS, FLAT AND BEZEL TYPE DIALS—PLUS A VAST ASSORTMENT OF WEATHER INSTRUMENTS. HUNDREDS OF CLOCK ITEMS. VERY COMPETITIVE PRICES. WRITE OR CALL FOR FREE 75 PAGE CATALOG. $2 FOR AIR MAIL.



THE QUARTZ FITUP THE MINI QUARTZ

Send To:
NEWPORT ENTERPRISES INC.
2313 W. Burbank Blvd.,
Burbank, CA 91506
(213) 845-0555

Make your own CABINETS



includes . . .
- **step-by-step procedures**
- **errorless layout**
- **professional advice**

No nonsense text and scores of detailed drawings make this manual an indispensible guide to the weekend craftsman as well as the professional.

Don't wait for this information, distilled from years of commercial small shop operations, it will save you time and money now.

To receive your postpaid copy send only $10 ($10.60 California, $12 Canada) to Artisan Woodworkers, 21415 W Broadway, Sonoma, CA 95476

WOODTURNERS

TWO-DAY TURNERS' WORKSHOP [SINCE 1976]
For beginners and experienced turners. Midweek or weekend throughout the year. Two students per class for personal attention. Sharpening and proper use of tools for faceplate and centers turning. Build confidence and experience, or just find out if you like to turn. Full accommodations available. (Too far to come? Ask for our winter "on-the-road" schedule.)

MYFORD ML8 WOODTURNING LATHE
Finest quality and design, including outboard tool rest for bowl turning. 36" or 42" between centers.

THE ZIMMERMAN WOODTURNING LETTER
Comprehensive; instructive; the "why" as well as the "how." Excellent preview or review for workshop.
1983 EDITION: 76 PAGES. $7 ppd.
1984 EDITION: 72 PAGES. $8 ppd.

SEND 40¢ IN STAMPS FOR DETAILS
Including SORBY turning tools, chucks, and DOUBLE-STICK TAPE. (Why use messy glue and paper to hold on bowls?)

RUSS ZIMMERMAN, RFD 3, BOX 242
PUTNEY, VERMONT 05346

Put it all together!

hundreds of uses

New clamping idea

Simple **MITY-TITE** System provides a wide range of clamping and banding capabilities that lets you do-it-better, faster and cheaper. Kit contains Super Tough Nylon tensioner, 50' polyester and 100' polypropylene strapping (reuseable) plus 10 metal and 10 plastic buckles. Kit is $11.95 delivered. Satisfaction guaranteed or 100% money-back. Write for valuable data.

MITY-TITE Systems
3712 B Lakeridge Drive W., Sumner, WA 98490

BUILD THIS OAK ICEBOX

Order plans for this fabulous reproduction

Our charming replica is sure to stir pleasant memories. Inside we have fitted shelves to make this cabinet the perfect storage place for small kitchen appliances and the like.

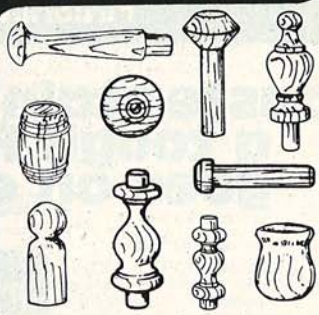
To order, specify icebox. Send check or money order for $9.00 (Canadian residents remit postal money order in U.S. funds) to:

Send $1, refundable with first order, for catalog.

HAMMERMARK ASSOCIATES
Box 201-W, Floral Park, N.Y. 11002

WOOD PARTS

WOODWORKS



Catalog $1.00 First Class
Free Fourth Class
WOODWORKS
4013-A Clay Ave. • Ft. Worth, Tx. 76117

You can build this
Stacking Bookcase
in your shop.

You can build this beautiful bookcase with stacking shelves, each with its own glass door that lifts up and slides back.

No special hardware needed.

Step-by-step plans with detailed illustrations.

You have the tools. (table saw and router) All you need is the plan!!

Order Plan 004 $14.00

Send check or money order to:

About Time Plans, Dept. WD9-4
7707 Aurora N. / Seattle, WA 98103

Brochure $1.00 - refunded with order.

Toolhauz CORPORATION™

14 Charles St., Needham, MA 02194

KLEMMSIA/NOBEX **CLAMPS** W. GERMAN STEEL-BEECHWOOD

8x4	$5.16	32x4	$8.12
12x4	5.74	40x4	9.36
16x4	6.18	48x4	10.75
24x4	7.29		

$88.00

NOBEX 202
EXTRA BLADES 24, 18, 12 TPI **$7.45**

$24.99 **NOOITGEDAGT—Holland**
Premium 3 pc. Gouge Set 3/8, 1/2, 3/4
Specify wood or plastic handles

Hand Screw Kits
8"-4.75 10"-4.95 14"-7.95 16"-10.95
2 ea. handles, threaded rods, nuts & pins Jaws not included

MAIL & PHONE ORDERS 617-449-4756 MC VISA AMEX
SEND FOR BARGAIN/DISCOUNT BIT LIST

Shop In Your Shop!

SEND $2 FOR
WOOD TENDER'S
New 42-Page Catalog
of in-stock woodworking tools, chair caning, reeding & rushing supplies, entry hardware, furniture brass, **WOOD TENDER®** finishing products and more!

All Orders Shipped Next Day
$2 Credit on First Order

WOOD TENDER
8165 Big Bend, St. Louis, MO 63119
314-962-7575

Continued from page 99

paste stain and varnish

slight discoloration and grain rising on the paste varnish samples, while the brushed-on polyurethane wasn't affected at all.

However, the paste finishes were easy to repair. To patch them, we buffed all three with steel wool and applied another coat of wax. We could still see very faint traces of raised grain in all three samples after rewaxing, but nothing that couldn't be lived with. All in all, we'd have to rate the paste finishes as being tough and easy to care for.

A distinct advantage of the paste varnishes in our book is that the finish itself is very thin, without much buildup. This gives that hand-rubbed look without all the elbow grease. The cost of the paste varnishes and stains is in the same ballpark with brushed-on varnish, and a little seems to go a long way. Another plus is that paste varnishes and stains are virtually odorless.

We've used these products on several projects with excellent results. Give 'em a try! We think you'll agree that paste varnish and stain solve a lot of finishing problems.

The paste varnish and stain products we tested are available from the following sources:

Heritage paste stain and varnish
Varnish $3.25 per ½ pint, $4.90 per pint
Stain $3.50 per ½ pint, $5.25 per pint
Crafts Products Company
(American Clock Builder Catalog)
2200 Dean St., St. Charles, IL 60174
312/584-9600

Bartley paste stain and varnish
Varnish or stain $6.50 per pint, $10.50 per quart
Trend Lines
170 Commercial St., Malden, MA 02148
800/343-3248

Velvit Poly-Gel Varnish
$8.50 per quart
Woodcraft Supply
41 Atlantic Ave., P.O. Box 4000
Woburn, MA 01888
800/225-1153

ANY WAY YOU CUT IT...

NOW YOU CAN DRY IT.

EBAC LUMBER DRYERS
Systems starting at 100 BF

Write or phone for FREE INFORMATION
1-800-433-9011
or
317-897-2100

Ebac of America
8726 East 33rd Street
Indianapolis, Indiana 46226

TOOLS USA

- Industry proven products
- 100% money back guarantee
- Order by phone or mail

100+ Page Tool Catalog Free with order or send $2 Cash/Ck./M.O.

50 Tooth Combination Carbide Blade
WAS $74.51 SPECIAL $44.90
10" Blade
freud
#LU84MO11

¼" R $14
⅛" R $15
½" R $18
Round Over Bits Carbide Tipped

Disposable Mask
100 for $19.88
600 for $79.50
This mask protects against a wide range of non-toxic dusts.

SAVE MONEY WITH OUR DIRECT-TO-YOU PRICES!

COVE
1/4" $13.00
3/8" 14.00
1/2" 16.00

ROMAN OGEE
5/32" $18.00
1/4" 20.00

1/8" Slot Cutter 14.00
1/4" Slot Cutter 14.00
3/8" Rabbeting 14.00

3/8" Dovetail 7.50
1/2" Dovetail 8.50
3/4" Dovetail 10.50

GROOVE FORMING OGEE
1/2" 18.80
3/4" 21.00

45° CHAMFER 15.00

P.O. Box 60906
Sacramento, Ca. 95860
916-363-9428

EASY WOOD FINISHING with WATCO®
The Original
DANISH OIL FINISH

You'll be amazed at how easy it is to finish wood beautifully with Watco Danish Oil. Watco gives wood that natural hand-rubbed look with long-lasting durability. And because Watco is **IN** the wood... not on it like temporary surface coatings.. there is no finish that will wear off. Watco Danish Oil is ideal for furniture, antiques, paneling, cabinets, doors, and trimwork. It's also safe for butcher blocks, cutting boards, and children's toys. Choose from 8 beautiful finishes... Natural, and Medium, Dark, and Black Walnut shades, and Cherry, Golden Oak, Fruitwood, and English Oak colors.

Send today for **"FREE"** color booklet **"HOW to Beautifully Finish Wood"** and the name of your nearest Watco distributor.

WATCO-DENNIS CORP., 1756-22nd St.
Santa Monica, CA 90404, Dept. BH-W94
Name _____
Street _____
City _____
State _____ Zip _____
213/870-4781

NEW! 24½-in. 3-SPEED BAND SAW

30-Day Free Trial

At last, a pro-size, band saw priced for the home shop! Big 24½-in. throat easily handles large scrollwork, complex curves, 4 x 8 sheets. 9-in. vertical cut makes it easy to resaw valuable hardwoods. Ball bearing construction, all-steel welded frame to eliminate deflection. Can be ordered complete with motor, stand, dust collector, rip fence, scroll saw table. Full instructions.

30-DAY FREE TRIAL!

Send for complete facts on how you can try this versatile saw without risk! Easy Terms.

Call Toll-Free 1(800) 824-7888 Oper. 642

Woodmaster Power Tools
Dept. SW2
2849 Terrace
Kansas City, MO 64108

☐ **YES!** Please rush me, free and without obligation, your Complete Information Kit on the new 24½" MODEL 500 BAND SAW plus facts on Woodmaster's 30-Day FREE TRIAL Money-Back Guarantee.

Name _____

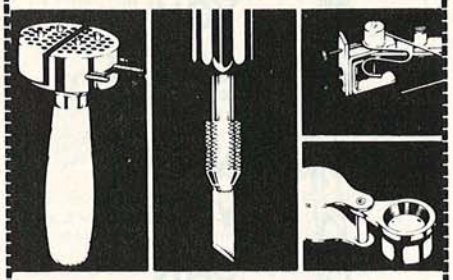
Address _____

City _____

State _____ Zip _____

Tools for Creative Hands™

NEW!



Over 800 hard to find Specialty Tools, to make crafting easier and more enjoyable ...all as close as your mailbox or telephone.

Tools for:

- Metal Smithing
- Model Making
- Wood Carving
- Sculpting
- Miniturizing
- Jewelry Making
- Toy Making
- Metal Casting
- Drafting
- Clock Making

To receive a copy of our latest catalog, use this coupon or send name, address and $1 to:

MICRO-MARK™
24 East Main St., Box 5112 QQ, Clinton, NJ 08809

Name (pls. print) _____

Address _____ Apt. No. _____

City _____

State _____ Zip _____

SOLID OAK WORKBENCHES

$97 — $200

Large Vises $39

Free Color Information

Tennessee Hardware Company
800 West Main Street
Woodbury, Tennessee 37190

615-563-2223

BUILD THIS SATELLITE TV ANTENNA FOR UNDER $200

Enjoy a new world of TV entertainment. Save $. Easy-to-follow, fully illustrated plans.

- **8' square antenna made from plywood arcs and window screen.**
- **Steel pipe antenna base.**
- **Listing of electronic equipment suppliers.**
- **How to tune into the satellites in your area.**

Send $11.95 post. paid check or money order to

PLAN CREATIONS

P.O. Box 983, Dept. W, Grass Valley, CA 95945

We mail 1st class (California residents add $.72 tax)

Visa & MasterCards—Please include Acc. # and Exp. Date.

Satisfaction guaranteed

PLATE JOINERY

ALTERNATIVE FOR DOWELING

$335.00 POSTPAID

VALID THROUGH 10/31/84

MasterCard, Visa, M.O., Check

THE VIRUTEX 0-81

FAST, ACCURATE JOINTS USING SLOTS AND WOOD SPLINES

Advantages Over Doweling:

- Stronger Joints
- Faster
- More Accurate Alignment

Fine Tool & Wood Store

7923 N. May Avenue
Oklahoma City, OK 73120

In Oklahoma Call 405-842-6828 Collect

TOLL FREE 800-255-9800

Send $2.00 for Catalog

CARBIDE TIPPED 3/4" DOVETAIL 1/4" shank

Make beautiful drawers and decorative joints with this large bit. **$12** ppd.

INDUSTRIAL CARBIDE TIPPED ROUTER BITS

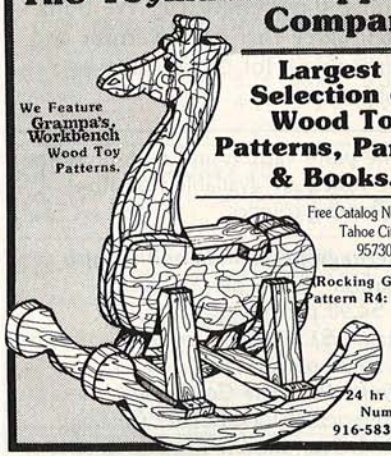
Buy any three 1/4" shank bits and get the 3/4" dovetail FREE.

H205	1/2" Double-flute Straight	$ 9.50
H208	3/4" Double-flute Straight	12.60
H304	1/2" Straight with Bearing Guide	11.50
H502	3/8" Panel Pilot with Drill Point	11.70
H702	1/2" "V" Grooving	18.00
H803	1/2" Cove Box	17.80
H1103	1/4" Slot Cutter	17.20
H1204	3/4" Corner Rounding	28.30
H1503	1/8" Round Nose	10.25
H1601	5/52" Radius Roman Ogee	28.00

For complete brochure/price list send $1 (refundable with first order). All cutters guaranteed against defects. All prices include shipping. Calif. residents add 6-1/2% sales tax. Visa and M/C accepted.

H&S TOOL CO.
(415) 567-7276
109 Minna St., Dept. 415
San Francisco, CA 94105-3796

The Toymaker Supply Company



We Feature Grampa's Workbench Wood Toy Patterns.

Largest Selection of Wood Toy Patterns, Parts, & Books.

Free Catalog No. G9, Tahoe City, CA 95730 5459

(Rocking Giraffe Pattern R4: $3.98 ppd)

24 hr Phone Number: 916-583-1555

High Profit in Wall Cabinets

Turn common inexpensive pine into beautiful colonial-style wall cabinets for use in every room of the home. Easy to make and very profitable.

Send for step-by-step plans of 3 best selling styles. $6.95.

BOX-ART
Dept. P, Box 8069
Woodridge, Illinois 60517

Tell us about yourself

We need to know more about you! We've put together this first issue of *WOOD* based on a lot of research, our own experience as home woodworkers, and a good deal of experience as magazine editors. But, to make the kind of magazine that will really be of the most use to you, we need your feedback. In all of the issues after this, we're going to have an extensive letters section, to which we hope you'll contribute. We want you to tell us what you think of the articles we publish, what kinds of projects you're doing, what you'd like to see more of in our magazine, and what you've discovered in woodworking that can help all of us involved in this wonderful craft.

But, for now, if you'll take a few minutes to fill out this basic questionnaire about who you are and what kind of woodworking you do, you'll really be giving us a hand.

Here's your chance to help shape this magazine the way you want it to be. Simply fill out the questionnaire and drop it in the mail. And, please don't hesitate to add a personal note if you have time. We really want to hear from you now, as well as in the future.

1. How many years have you been involved in woodworking?

11-1 ☐ Less than 1 year
2 ☐ 1–2 years
3 ☐ 3–5 years
4 ☐ 6–9 years
5 ☐ 10 years or more

2. Are any other members of your family involved in woodworking?

12-1 ☐ Yes 2 ☐ No Please specify _____

3. How many hours per week do you spend at woodworking?

13-1 ☐ None
2 ☐ 1–5
3 ☐ 6–10
4 ☐ 11–15
5 ☐ 16–20
6 ☐ More than 20

4. Do you have a workshop?

14-1 ☐ Yes 2 ☐ No

5. If so, where is it?

15 ☐ Garage
16 ☐ Basement
17 ☐ Attic
18 ☐ Spare room
19 ☐ Separate building
20 ☐ Other

6. How big is it?

21-1 ☐ 50–99 sq. ft.
2 ☐ 100–149 sq. ft.
3 ☐ 150–199 sq. ft.
4 ☐ Over 200 sq. ft.

7. What's your level of woodworking ability?

22 ☐ Beginner
23 ☐ Intermediate
24 ☐ Advanced
25 ☐ Professional. What kind? _____
26 ☐ Teacher Whom do you teach? _____

8. What kinds of woodworking do you do and/or would you like to learn more about?
(Check all that apply and underline your chief interest.)

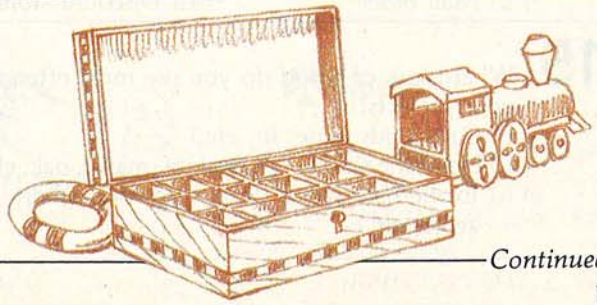
	Do Now	Would Like to Learn More About
Cabinet building	27 ☐	☐
Furniture making	28 ☐	☐
Woodcarving	29 ☐	☐
Marquetry and veneering	30 ☐	☐
Turning	31 ☐	☐
Outdoor projects	32 ☐	☐
Small-scale projects	33 ☐	☐
Model building	34 ☐	☐
Kit construction	35 ☐	☐
Refinishing and restoration	36 ☐	☐
Other _____	37 ☐	☐

9. For whom or what do you build your projects? (Check all that apply and underline the most applicable)

38 ☐ Yourself
39 ☐ Your family
40 ☐ For kids
41 ☐ For gifts
42 ☐ For sale
43 ☐ Other _____

10. On an average, how much do you spend on materials for a project?

44-1 ☐ $0–9
2 ☐ $10–24
3 ☐ $25–49
4 ☐ $50–99
5 ☐ More than $100



Continued

QUESTIONNAIRE

11. Do you belong to any woodworking clubs or organizations?

45-1 ☐ Yes 2 ☐ No Please specify _____

12. What tools do you own or intend to buy within the next year?

Stationary tools	Own	Intend to Buy
Table saw	46-1 ☐	2 ☐
Radial arm saw	47-1 ☐	2 ☐
Band saw	48-1 ☐	2 ☐
Jigsaw	49-1 ☐	2 ☐
Drill press	50-1 ☐	2 ☐
Jointer	51-1 ☐	2 ☐
Shaper	52-1 ☐	2 ☐
Wood lathe	53-1 ☐	2 ☐
Belt-disk sander	54-1 ☐	2 ☐
Bench grinder	55-1 ☐	2 ☐
Carving duplicator	56-1 ☐	2 ☐
Multipurpose tool	57-1 ☐	2 ☐
Planer	58-1 ☐	2 ☐
Others (please specify) _____		

Portable electric tools		
Pad sander	59-1 ☐	2 ☐
Belt sander	60-1 ☐	2 ☐
Drill	61-1 ☐	2 ☐
Router	62-1 ☐	2 ☐
Circular saw	63-1 ☐	2 ☐
Saber saw	64-1 ☐	2 ☐
Chain saw	65-1 ☐	2 ☐
Miter box	66-1 ☐	2 ☐
Others (please specify) _____		

13. In which of these outlets do you buy your tools? (Check as many as apply.)

67 ☐ Hardware stores
68 ☐ Discount stores
69 ☐ Department stores
70 ☐ Lumberyards
71 ☐ Home improvement centers
72 ☐ Mail order

14. Where do you buy the materials for your projects? (Check as many as apply.)

73 ☐ Lumberyards
74 ☐ Home improvement centers
75 ☐ Mail order
76 ☐ Specialty woodworking stores
77 ☐ Discount stores

15. What types of wood do you use most often for your projects?

11 ☐ Softwoods (pine, fir, etc.)
12 ☐ Domestic hardwoods (walnut, maple, oak, etc.)
13 ☐ Exotic hardwoods (teak, rosewood, ebony, zebra, etc.)

16. Where do you get the ideas for your projects?

14 ☐ Design my own
15 ☐ Plans or ideas found in magazines
16 ☐ Plans I buy
17 ☐ Plans or ideas in books
☐ Other _____

Tell us about yourself

17. Sex

19-1 ☐ Male 2 ☐ Female

18. Age

20-1 ☐ Under 18
2 ☐ 18–24
3 ☐ 25–34
4 ☐ 35-44
5 ☐ 45–54
6 ☐ 55–64
7 ☐ 65 or over

19. Education

21-1 ☐ Grade school
2 ☐ High school
3 ☐ Some college
4 ☐ Graduated college
5 ☐ Postgraduate work

20. Do you:

22-1 ☐ Own your home
2 ☐ Rent a house
3 ☐ Rent an apartment
4 ☐ Other _____

21. What is your occupation?

23-1 ☐ Professional/executive
2 ☐ Homemaker
3 ☐ Secretarial/clerical
4 ☐ Student
5 ☐ Semiskilled worker
6 ☐ Skilled worker
7 ☐ Self-employed/proprietor
8 ☐ Retired
9 ☐ Armed services
24-1 ☐ Farmer/rancher
2 ☐ Unemployed

22. What's your family income per year?

25-1 ☐ Under $15,000
2 ☐ $15,000–19,999
3 ☐ $20,000–24,999
4 ☐ $25,000–34,999
5 ☐ $35,000–49,999
6 ☐ $50,000 or more

23. (OPTIONAL)

Name _____

Street Address _____

City, State, Zip _____

26-27 28-29-30-31-32

Thanks for taking the time to help us out.

Please send to:

Editor, Wood Magazine
Locust at 17th
Des Moines, IA 50336

FULL SIZE
WOODWORKING PATTERNS

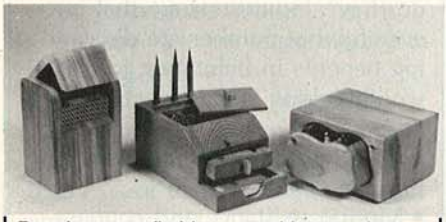
- 100 Assorted Patterns Packet $3.50
- 12 Action Windmills Packet $4.50
- 29 Birdhouses & Feeders Packet $4.50
- 12 Jigsaw Puzzles Packet $3.50
- 20 Toys Packet (Cars, Boats, etc.) $4.50
- 10 Weathervane Packet $3.50

INQUIRE ABOUT OUR FURNITURE PLANS

Packets sent Prepaid 1st Class Mail. Catalog 25¢ Refundable.

HAYES PATTERNS

6 Willow St., Dept. W D 9
Woburn, Mass. 01801



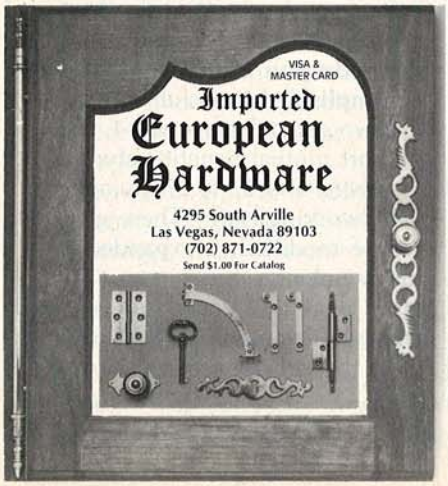
Develop a profitable second income in your spare time making small, unique bandsaw boxes. This unpublicized, little-known technique allows you to turn common inexpensive lumber and scraps into valuable utility boxes for the home and office. High demand in gift shops, stationery stores and craft fairs. Fully illustrated instruction booklet of 15 original and profitable designs. Satisfaction absolutely guaranteed. Send $10.00 to **Box-Art, Dept. P, Box 8069, Woodridge, IL 60517.**

Create A Classic

Full size patterns for Packard Le Baron and 1929 Chevy Truck, plus a catalog of over 100 wooden toy patterns, wooden wheels, axle pegs, people, and other hardwood turnings.

Send check or money order for $10.00 for both patterns and catalog, or $1.50 for catalog.

TOY DESIGNS - Dept. BW984, Box 441
Newton, Iowa 50208



MORE THAN A CATALOG...

Woodcraft is more than a catalog – it's one of the best sources for quality woodworking tools you'll ever discover. We're your source for everything from bit braces to wood borers, from saws to sharpening stones. Every item is crafted to meet precise standards of excellence, and backed by our guarantee of satisfaction. Some people may call this a catalog, but if you're a woodworker we think you'll call it indispensable. Send for your FREE Woodcraft Tool catalog today.

WOODCRAFT®
Dept. WBH94, 41 Atlantic Avenue,
Box 4000, Woburn, MA 01888

☐ **Please send me your FREE tool catalog.** WBH94

Name _____
Address _____
City _____
State _____ Zip _____

WOOD WORLD

A TOOL FOR THE MAN WHO HAS EVERY TOOL

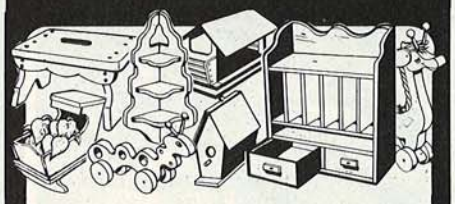
A wooden plane bottle opener just for fun ($8.88 ppd).

FOR A CATALOGUE OF OUR EXTENSIVE LINE OF FLEXIBLE VENEERS, TOOLS, LUMBER, BOOKS, ETC. ENCLOSE $2.50.

1705 W. University
Tempe, AZ 85281
(602) 966-2444

BUILD IT YOURSELF

TOYS • PUZZLES • PLAQUES • PLANTERS
FURNITURE • LAWN ITEMS • BIRD HOUSES
ROCKING & RIDING HORSES • PLAY SETS



SAME SIZE PATTERNS • WHEELS • HOW-TO BOOKS
40 PAGE ILLUSTRATED CATALOG $1.00
Design Group, Box 514-Z, Miller Place, N.Y. 11764

WEIRD WOOD

BUTTERNUT, WALNUT, ROSEWOOD, PINE, CHERRY, BUCKEYE and about a dozen other woods in boards, slabs and freeform cut ovals. Pieces up to 6" thick, 3' wide and 16' long in some species. We specialize in coffee tables, benches, bars, carving stock, clock ovals and movements, accurately cut for you to finish. We sell by mail and from our fantastic wood "museum," 9-5 Mon.-Sat., 11-4 Sun. Send 50¢ in coin or stamps for brochure. No checks, please.

WEIRD WOOD, Box 190WBH
Chester, Vt. 05143, 802-875-3535

Hardwoods of Memphis

NASHVILLE, TN
MEMPHIS, TN
LITTLE ROCK, ARK

- *FREE DELIVERY* in Continental U.S.A.
- *FREE 15 BOARD FEET* of exotic Emeri wood with each $500 purchase.

"Fine Woods and Tools"

P.O. Box 12449 • Memphis, TN • 38182-0449
TN., call collect (901) 452-9663 others (800) 321-5239

Makita

$1,285.00

All complete with motors and stands except 9" miter saw which does not include stand.

We accept VISA, MasterCard, Money Order, Cashier or Personal Check.

Rockwell

28-243	14" BANDSAW	$519
37-609	6" JOINTER	$299
34-410	10" CONTRACTORS SAW	$749
34-010	9" MITER SAW	$159
34-580	9" HOMECRAFT SAW	$249

Mortimer Schwartz, President
Fine Tool Shops Inc.

UP TO 45% OFF

My favorite wood drill bits... and they're yours for an incredible $9.95

It's a 14 piece set. 7 professional quality drill bits and 7 matching stop collars. Advertised up to $17.95

You won't find these in hardware stores. These are *brad point* wood drill bits. With brad points, you make the holes exactly where you want with no "jumping" or "walking". Each bit has two cutting spurs with extremely sharp flutes. You get router clean holes every time with none of the splintering that happens with ordinary metal drill bits.

No serious pro would drill without a stop collar when precise depth is important. In doweling, for instance. This stop collar set comes fitted with slotted locking screws for exact no-slip drilling of clean unsplintered holes.

Drill bit sizes are 1/8", 3/16", 1/4", 5/16", 3/8", 7/16" and 1/2". Use for all 3/8" chucks.

Call **800-243-1037** (CT call 797-0772)
OR SEND COUPON TODAY

the Fine Tool Shops Inc.

YES, please send me your 14 piece wood drill bit and stop collar set. If I'm not perfectly satisfied, I understand I can get a complete refund by returning my order within thirty days.
☐ Check or money order enclosed. (Include **$2.00** for shipping and handling.)*
Charge my ☐ VISA ☐ AMEX ☐ MasterCharge ☐ Diners.

Signature _____

Account No. _____ Exp. Date _____

20 Backus Ave.
Danbury, CT 06810
Dept. WM S4

Name _____
please print

Address _____

City _____ State _____ Zip _____

*Connecticut residents must include sales tax

SOUND ADVICE

wood-working clubs

Print this article

Woodworkers work alone, losing their thoughts in the smell of wood, saw noises, and the familiar confines of the shop. Or do they? Indications are that an evergrowing number are discovering benefits in belonging to a woodworking club. Benefits such as —

- Exchanging knowledge, information, and skills
- Mutual assistance and cooperation on projects
- Cost-sharing of tools, materials, and workspace
- Discounts through group purchases
- Social comraderie in their craft

There's a lot more, too. An organization like a woodworking club can arrange for special speakers, demonstrations, and field trips to facilities and manufacturers unavailable to individuals.

As a group, woodworkers can make a significant contribution to community service — special projects for charity fundraisers, assistance to vocational education, repairs and construction of facilities for Little League, and other worthwhile endeavors.

There may be a woodworking club in your area to join — a check with a lumberyard, hardware store or power tool dealer should tell you — but if not, you may want to start one. Before you begin, though, there are some things to consider.

What do you want your club to accomplish? Most clubs operate for two general purposes: 1. To support mutual benefit between members, and 2. To encourage the woodworking craft. These goals can be modified or expanded to suit members.

How large will your club be and who will be members? What you want the club to accomplish may

decide its size. And the criteria for membership, as well as dues, may limit the number who can join. A very large club, for example, may be able to support a fully equipped shop and even pay for a manager. A club limited to members of a prescribed skill level will be small.

No matter the eventual size of the woodworking club, you'll have to start with some highly interested individuals able to keep it going and take on responsibility as it grows.

Where do you find potential club members? Anywhere woodworkers tend to frequent is a likely place to start. Posters or announcements in lumberyards, home centers, and schools with adult vocational courses will help. Organizations to which you already belong may also be a source of members. Once the club begins, others will become interested.

Shopsmith has a full-time program for developing woodworking clubs and can help you find members as well as provide you with a kit to get started.

According to Vince Pax, Club Development Manager, the company presently works with about 75 clubs across the nation and has recently developed a national organization of woodworking clubs. Write him at Shopsmith, Inc., 750 Center Drive, Vandalia, OH 45377, or call toll-free 1-800-543-9396 (in Ohio, 1-513-898-6070) for your kit.

When it comes, you'll find pages of information on forming a club — tips on structure, member enlistment, rules, programs, and publicity. Also included are sample forms for an organizational checklist, minutes, expenditures and receipts, group buying, and a press release.

When your club is established, Shopsmith will publish your news in *Shavings*, their bi-monthly woodworking club newsletter if you'd like.

There's nothing like this kind of help when you need it.

RIPSTRATE® SAVES FINGERS

AND GIVES STRAIGHTER CUTS

If you own a table or radial arm saw you know what that whirling blade could do to your hands. RIPSTRATE guides the work tight against the fence and table while you push it through with a stick, with both hands away from the blade. ALSO PREVENTS KICKBACKS. Requires no adjustment. RIPSTRATE is not just a safety device. Professional shops use it because it gives straighter cuts and speeds the work. Money back guarantee. $59.50. Add $3.50 shipping. Check, Visa, M/C. Free brochure.

Call or write:
Fisher Hill Products
4 Fisher Hill
Fitzwilliam, NH 03447
603 585 6883

Light to Heavy-Duty: one level of finish!

MODEL 100

Jenks is featuring special pricing on all Porter-Cable routers! All feature micrometer depth of cut adjustment dial, replaceable bases, and powerful motors protected against overload temperatures. Interchangeable collets permit the use of 1/4", 3/8" or 1/2" shank diameter bits on 1½ HP Model 690; 3/8" and 1/4" for 1 HP Model 630 and 1¼ HP D-handle Model 675; 1/4" and 1/2" for 2½ HP Model 514 and 1½ HP Speedmatic Models 536 and D-handle 537. Model 100 has 7/8 HP and 1/4" collet chuck. Send for the FREE W.S. Jenks & Son 84 catalog for more values on handtools, powertools, and machinery--including router bits and accessories for Porter-Cable routers.

W.S. JENKS & Son
738 Seventh Street N.W.
Washington, D.C. 20001
TOLL-FREE order line:
1-800-638-6405

Send the indicated items:

___ Model 100 7/8 HP Router, ~~$124.00~~ . . Now $ 92.35
___ Model 514 2½ HP Router, ~~$435.00~~ . Now $323.99
___ Model 536 1½ HP Router, ~~$295.00~~ . Now $219.75
___ Model 537 1½ HP Router, ~~$310.00~~ . Now $230.99
___ Model 690 1½ HP Router, ~~$179.00~~ . Now $132.99
___ Model 675 1¼ HP Router, ~~$174.00~~ . Now $129.75
___ Model 630 1 HP Router, ~~$135.00~~ . . . Now $100.55
___ Jenks FREE 84 Woodworking Tool Catalog

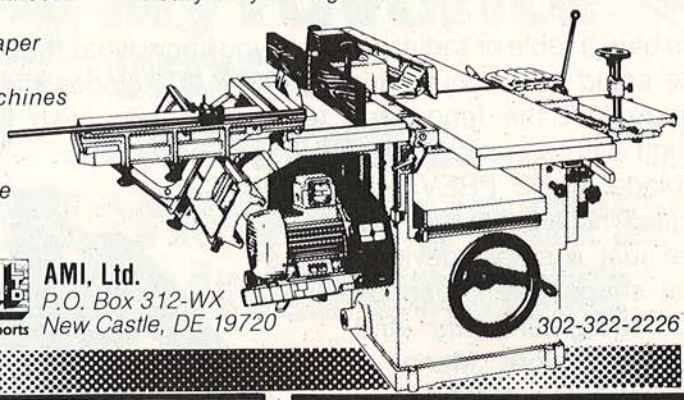
___Money Order/Check enclosed in amount of_____
___MasterCard ___Visa ___Am. Express

Card No. _____
Signature _____
Name _____
Address _____
City _____ State _____ Zip _____

FELDER

Woodworking System

- 16" jointer/surfacer
- 16" planer/thicknesser
- 12" table saw
- heavy-duty shaper
- heavy-duty mortiser
- heavy-duty sliding table



Over 25,000 machines are already in use in Europe.

Write for your free brochure today!

AMI, Ltd.
P.O. Box 312-WX
New Castle, DE 19720
302-322-2226

Advanced Machinery Imports

Send For New 36 Page Woodworker's Catalog

100's patterns, veneers, toy supplies, hardwoods, shaker pegs, candle cups, dowels, spindles, cane, rush, splint, books, inlays, reproduction hardware, abrasives. Save to 25% on bonus starter offers! *Hurry!*

Morgan Woodworking Supplies, Dept. WO6M01
1123 Bardstown Rd., Louisville, KY 40204

Please rush my new 36 page woodcrafter's catalog.

Name _____

Address _____

City _____

State _____ Zip _____

Wood Moisture Meter

- Avoid Moisture Problems
- Protect your Masterpiece

Pocket-Size
MINI LIGNO

only
$110

Incl. Case, Batteries, and Pins for 3/16" and 7/16" Measuring Depth. Size: 1"x 2¾"x 5½" Range: 6%, 7%, . . .20%

also from Lignomat:
MINI-LIGNO E
Range: 6%, 7%, ...36%

Easy-to-use, sturdy instruments for the professional woodworker or serious hobbyist. Measures moisture in lumber, veneer, fiberboards. Ask for free catalog on the complete line of moisture meters and accessories. we can show you how to use a moisture meter efficiently.

Lignomat USA Ltd. Tel: 800-227-2105 503-257-8957
P.O. Box 30145 Dept. BH Portland, OR 97230

NEW AFFORDABLE

BANDSAW MILL

The WOOD-MIZER is a one man portable sawmill with a huge 30" dia X 16' long cutting capacity. This safe, easy-to-operate mill cuts with an efficient traveling bandsaw carriage. Why waste lumber and money by cutting with an old fashioned circular mill when the WOOD-MIZER can give you 30% more usable lumber out of each log on less than half the fuel and horse power? This accurate cutting system is everything a sawmill should be and more.

For More Information Send $1.00 to:
WOOD-MIZER, Dpt. 00
4004 W. 10th St.
Indianapolis, IN 46222
(317) 243-7565

WOOD TOY

★ Patterns - Parts - Wheels
★ Send $1 for new catalog and receive coupon for **FREE** wheels & axle pegs.
★ Free Shipping in U.S.

toys and joys
Box 628-W
Lynden, WA 98264

For families who enjoy and take pride in their homes, there's no more appropriate gift than a subscription to WOOD.

PIN ROUTER

Speed and Precision at a Small Shop Price.

With the Award Winning Onsrud Inverted Router, templates are so simple it is economical to reproduce one part or hundreds.

Call or write for our free literature today.

C.R. ONSRUD INC.

MODEL 2003

(704) 528-6170
P.O. Box 416, Troutman, N.C. 28166

LIVOS NON TOXIC FINISHES

LIVOS is a new approach in beautiful finishing without the use of toxic chemicals. Your environment will be improved through the pleasant fragrance of plant oils, essential oils and natural tree resins. Breathing problems, dizziness and other after-effects are eliminated.

No toxic fumes during application or from the dried product. No mineral spirits, no petroleum products, no chemical dryers.

Safe for children, animals and plants.

Send for FREE Mail Order Catalogue on:
Oil Finishes, Waxes, Shellacs, Lacquers, Polishes, Stains & Wood Preservatives. *(Product of West Germany)*

WOODPECKER'S TOOLS, INC.
614 AGUA FRIA STREET #10,
SANTA FE, NM 87501
(505) 988-2288

Please send me also your FREE Mail Order Catalogue of Quality Tools for Professionals and Craftsmen. ☐

---

101 · GIFT & NOVELTY · PATTERNS

This wonderful packet contains 101 FULL SIZE PATTERNS of Gifts, Novelties, Lawn Figures, Bird Houses, Shelves, Action Windmills, Alphabets, and many more things. Just trace and saw out. Plus "Make Money Jig Sawing". Only $7.00 Prepaid 1st Class for this big packet.

MASTERCRAFT PLANS WEST, DEPT. 55H
P.O. Box 625, Redmond, WA 98073

Garden WINDMILLS

FULL SIZE PATTERNS

Beautify your lawn with these picturesque old windmills, 4 to 6 ft. high. Easy to make with full size patterns and step by step instructions. Only $7.00 Prepaid 1st Class for WINDMILL PACKET with patterns for both.

MASTERCRAFT PLANS WEST, DEPT. 519H
P.O. BOX 625, Redmond, WA 98073

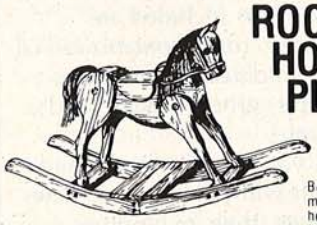
Furniture Hardware
Chair Cane
Lamp Parts

Paxton Hardware

7818 Bradshaw Rd., Dept. BH2, Upper Falls, MD 21556

Catalog $1.50 3rd Class
or $2.50 1st Class *(301)592-8505*

Full-Size TRADITIONAL ROCKING HORSE PLAN

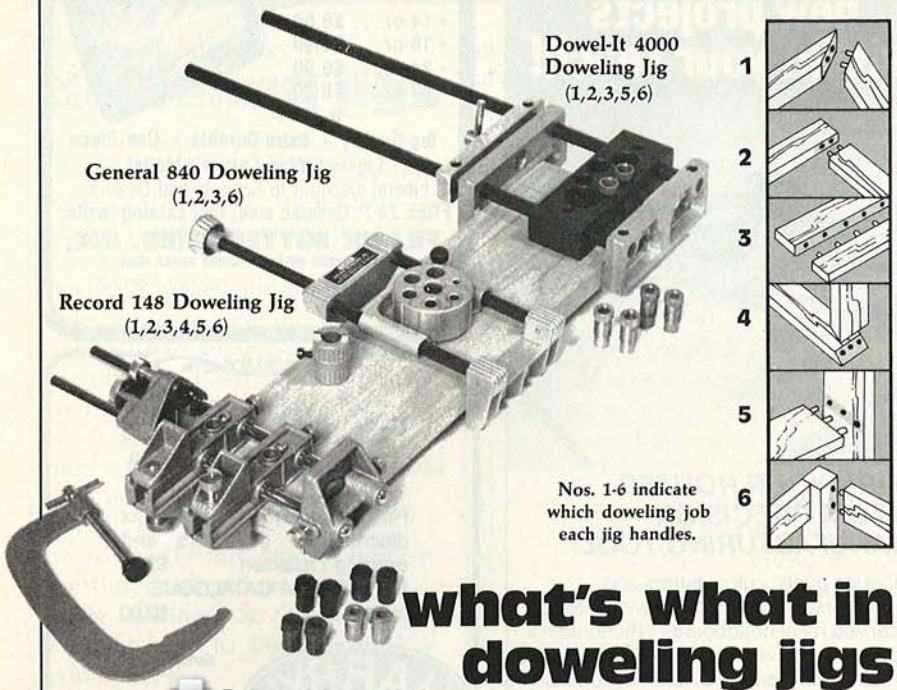


Bring back the magic of childhood using our full-size plan for the Traditional Rocking Horse. Easy to build—body legs and head are shaped using files. Rockers are curved for maximum action and shaped for desirable safety. Use pine or any available hardwood—paint to resemble live pony. Tomorrow's heirloom today!

Plan No. 121 $10.75

CATALOG
180 diff., full-size prof. furniture plans–$2.00
(catalog free with order)

FURNITURE DESIGNS, Dept. BZ-94
1425 Sherman Ave., Evanston, IL 60201



what's what in doweling jigs

Print this article

These handy-to-have-around tools take the guesswork out of joining wood with dowels.

Most woodworkers acknowledge the dowel joint as a good option for use with furniture, cabinets, and assorted other projects. The trick has always been drilling straight holes that line up with each other. Enter the doweling jig. Once you learn how to use any one of the five jigs shown, you should be able to make perfect dowel holes every time.

If all of them perform well, what difference does it make which one you buy? The answer lies partly in the type of work you want the tool to do; partly in how much money you're willing to spend.

Some of the five jigs we tested work only with lumber less than 2½" wide, for example. And some are more limited in the doweling situations they will handle. There are other subtle differences as well.

Each jig featured has something to commend it, and hopefully our report will help you understand each tool's relative merits.

Record 148 Doweling Jig, $56.53
Capacity: ¼", 5/16", ⅜" drills
This jig is a study in contrasts. Although the most versatile and accurate of the tools we tested, it's also the most difficult to learn how to use and set up. The product comes with a 10-page instruction manual, which is required reading.

As for the #148's versatility, it has two independently adjustable drill guide blocks, which have adjustable side stops that you can remove for wide work pieces. The manufacturer also furnishes a C-clamp to hold the jig in place when the clamp jaw has been removed. The above-mentioned features allow you to drill holes anywhere you want.

Set up with this jig does take time, mainly because the drill guide blocks and their stops don't have index marks.

General 840 Doweling Jig, $24.96
Capacity: 3/16", ¼", 5/16", ⅜", 7/16", ½" drills
Quick to set up and use, this jig

Continued on page 111

"I'm so certain this is the right saw for your shop, I'm making a 30-day Trial Offer."
J. PHILIP HUMFREY

Full Size • EXCALIBUR • Full Power

TEST the Excalibur 24 like a professional. You'll convince yourself!

USE an Excalibur for 4 weeks. You'll be convinced it's everything we say it is – or simply return it for a full refund of every cent you've paid. Try asking our competitors to match this no-risk offer.

You'll know for sure, that the Excalibur 24 Precision Saw is the best machine!

EXCALIBUR 24" PRECISION SAW PACKAGE
$US 1285. c/w 150 blades, rugged metal stand, instruction manual, 24-month warranty. Delivered to your door.
Add $59.00 for magnifier/lamp. (Reg. $120.00)
CALL COLLECT TO ORDER TODAY!
(416) 293-8624

J. Philip Humfrey Ltd.
3241 Kennedy Road, Unit 7 (Dept. 11),
Scarborough, Ontario, Canada
M1V 2J9 Telephone (416) 293-8624

EXCALIBUR FEATURES
- Cuts with all 5" blades #8/0 to .25" wide
- Cuts are true and require virtually no sanding
- Cuts to 2¼" thick stock and to center of a 48" panel
- Extra-large 14" × 24" worktable tilts both ways
- Provides operator with absolute control and an infinite range of cutting speeds up to 1800 strokes per minute
- Ball-bearing construction - not bronze bushings
- Parallel arms will not distort under high tension cutting

☐ Please rush me your illustrated folder on the Excalibur 24" Precision Saw.

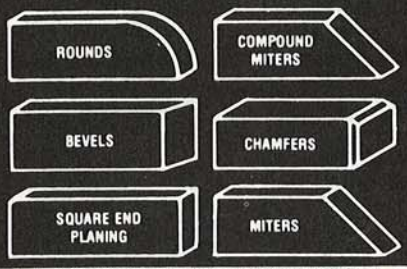
Name _____
Address _____
City _____
State _____
Zip Code _____

PERFECT MITERS
GLASS-SMOOTH CUTS

Any wood: soft or hard!

Any angle: 45°-90°

CLEAN, PRECISE CUTS LIKE THESE ARE A SNAP



LION MITER TRIMMER

POOTATUCK CORPORATION
P. O. Box 24 • Dept. BHW9
Windsor, VT 05089 (802) 674-5984

Name _____

Address _____

_____ ZIP _____

Your most valuable tool. THE FROG CATALOG

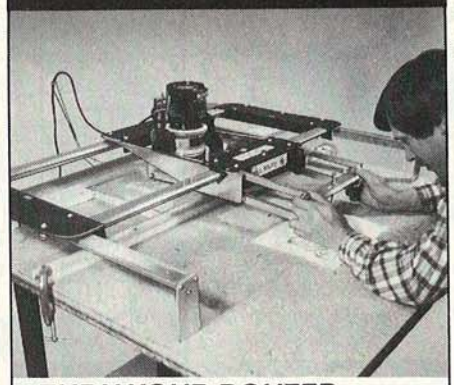
When you open our big 100-page catalog you'll find the largest selection of quality woodworking tools and books in America.

We stock over 5000 different tools including the Myford lathe, and offer immediate service.

The FROG catalog belongs on your workbench. Send $2.50 for two-year subscription, refundable.

FROG TOOL CO., LTD., Dept. 75
700 W. JACKSON, CHICAGO, IL 60606

Mill-Route™ puts hundreds of new projects within your reach!



TURN YOUR ROUTER INTO A PRECISION MANUFACTURING TOOL!

Create ovals, cutout letters and numbers, perfect circles, fancy frames, carved relief headboards—hundreds of projects you've only *wished* you could make! Mill-Route provides new precise control and versatility for your router:

- **Sets quickly** and accurately for straight line grooving and moulding.
- **Holds tight registration** for multiple-pass cuts.
- **Creates production templates** from pencil sketches.
- **Holds router perpendicular** to work at all times.
- **Travels smoothly** on 16 roller bearings.
- **Tracks effortlessly** in all 3 dimensions.
- **Covers 24"x 20"** area with 3" vertical travel (extensions available).
- **Router retracts to "up" position** when hands are removed from guide.
- **Shields hands** a safe 20" from blade action.

ONLY $159.00 Plus Shipping and Handling
(router not included)

90-DAY WARRANTY

PLEASE SEND ME
☐ FREE INFORMATION
☐ MILL-ROUTE
PLEASE CHECK ONE:
☐ CHECK ☐ MONEY ORDER
☐ VISA ☐ MASTERCARD

VISA
M.C.

SIGNATURE _____
EXPIRATION DATE _____
I WISH TO ORDER:

Mill-Route Unit	$159.00
plus shipping and handling	8.95
Texas residents add 5% sales tax ($7.95)	
TOTAL	$

NAME _____
ADDRESS _____
CITY _____ STATE _____ ZIP _____

Make Checks payable to Progressive Technology, Inc.

MAIL THIS FORM TO: Mill-Route
P.O. Box 98
Stafford, Texas 77477-0098

Mill-Route is a product of Progressive Technology, Inc., Houston, TX.

THE MAGNIFICENT MALLET

- 14-oz . . . $6.60
- 18-oz . . . $6.60
- 24-oz . . . $6.90
- 32-oz . . . $6.90

+$2.25 Pstge.

Top Quality • Extra Durable • One-Piece Lignum Vitae Carver's Mallet

Liberal discount to Schools and Dealers.

FREE 24-P. German steel tool catalog-write:

FRANK MITTERMEIER, INC.
IMPORTERS OF FINE TOOLS SINCE 1936
Dept W-09, 3577 E. Tremont Avenue
Bronx, New York 10465

FALL 1984 CATALOGUE
Coming Out September 10

Fine used and antique tools for discriminate collectors and exacting craftsmen. $2.00

SPRING 1984 CATALOGUE available. $2.00

Send order to:

HARRY'S HARDWARE

Ruth & Chris Kaldor
CABOT, VERMONT 05647
Phone (802) 563-2291

New

E-Z PNEUMATIC DRUM SANDER
...For woodworkers & carvers. Inflates to desired firmness, contours to the shape of your work. Eliminates hand-sanding. **Foredom tools-Detail Master burning unit-Abrasives-Books and more, at great prices!**

Catalog $2.00 (refundable).
North West Carving Supplies
P.O. Box 5211
Bozeman, MT 59715

Bolts • Nuts
Screws

SAVE TIME — SHOP BY MAIL

All types available at discount prices.

STEEL STAINLESS BRASS

Satisfaction or Money Back

$1.00 for catalogue—refundable with first order

D.S. Houston
Box 18474, Houston, TX 77023

Continued from page 109

doweling jigs

accepts lumber up to 4½" wide, which makes it more versatile than some of the others. A spring-loaded turret drill guide mounted on a carriage that rides on indexed steel rails makes positioning the holes a breeze. We did notice that our unit had about 1/64" of play in the turret and carriage when they were locked in position. That won't cause fitting problems in most situations, but the 840 would be a better jig without the play.

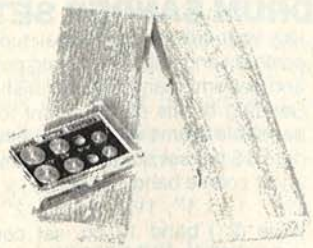
With the General, you drill holes directly through the holes in the turret rather than through guide bushings. So you'll want to be careful not to angle the drill as you insert it.

Dowl-it 4000 Doweling Jig, $102.14
Capacity: ¼", 5/16", ⅜", ½", ⅝", ¾", 1" drills
Designed primarily for wide projects, this jig has guide rods that hold lumber up to 12" wide. It won't work well with boards under 2½".

One interesting feature built into this jig is its ability to drill matched pairs of holes in the ¼", 5/16", and ⅜" sizes at 13/16" center to center without moving the jig.

The hex set screws used as the only locking device on this jig are troublesome. They are inconvenient to use and complicate things unnecessarily.

General 888 Dowel Centers, $2.36
Capacity: ¼", 5/16", ⅜", ½" drills



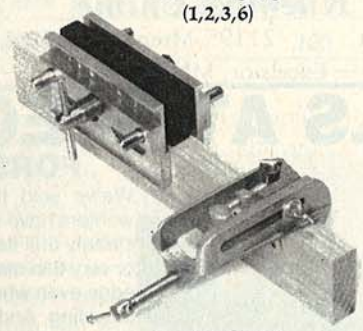
General 888 Dowel Centers

Difficult to classify, dowel centers really aren't a jig in the sense of guiding a bit or a blade. But they are an extremely easy way of marking opposing dowel holes in odd shapes that other jigs can't tackle. Some woodworkers swear by these handy little markers and they're worth having around.

Dowl-it 1000 Doweling Jig, $39.15
Capacity: ¼", 5/16", ⅜", 7/16", ½" drills
The only self-centering jig we tested, the 1000 will handle lumber up to 2⅜" wide and as narrow as ⅜". We found this jig to be quite easy to use. Turning the threaded rod in the center of the jig clamps the jaws to the board. Since the drill block is always in the center of the piece, you can't do offset doweling with it.

The 1000 does have index marks, but on the black guide block, they are hard to see.

Dowl-it 1000 Doweling Jig (1,2,3,6)



Stanley 059 Doweling Jig (1,2,3,6)

Stanley 059 Doweling Jig, $39.95
Capacity: ¼", 5/16", ⅜", 7/16", ½" drills
A good compact jig, the Stanley features an easily manipulated control block and clamp mechanism. With a clamp capacity of 2⅜" wide, the jig won't help you with wide stock, but for edge-joining and for attaching rails, legs, or facers it is very accurate. Clearly scribed index marks make setup an easy chore.

The removable hardened steel guide bushings are a mixed blessing. Though inexpensive and easy to replace, they tend to get lost easily.

Humfrey's Three Beautiful Basics For Your Shop

[1] GENERAL

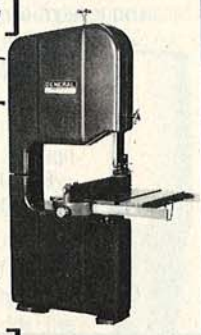
10" Tilting-Arbor Saw #350
- 28" × 36" table
- 385 lbs

Complete with new adjustable metal table insert.

US$1200.*

[2]

US$645.*



GENERAL 15"
Wood Cutting Band Saw #490
- 15" × 15" table
- 210 lbs

Enclosed metal stand available

[3]

US$655.*

GENERAL 12"
Standard Duty Wood Lathe #160
- 38" centers
- 140 lbs

Metal cabinet-style stand available

COMPARE OUR REMARKABLY REASONABLE PRICES
CALL COLLECT TO ORDER TODAY!
(416) 293-8624

*Plus Electrics. Shipped freight collect. No other charges

J. Philip Humfrey Ltd.

SPECIAL OFFER!
Now, when you buy our 32-page Catalog, you will receive 3 credit vouchers redeemable on any catalog purchase for $10.00 per machine – a total of $30.00

3241 Kennedy Road, Unit 7 (Dept. 22),
Scarborough, Ontario,
Canada M1V 2J9
Telephone (416) 293-8624

☐ Please rush me your latest catalog.
I enclose $3.00 (refundable against purchase)

Name _____
Address _____
City _____
State _____
Zip Code _____

DO YOU USE OR COLLECT FINE HAND TOOLS?

ANTIQUE — OBSOLETE — MODERN

IF SO,

YOU SHOULD BE READING

THE FINE TOOL JOURNAL

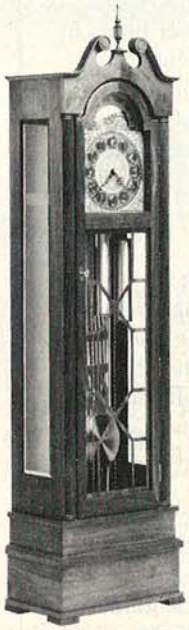
PUBLISHED 10 TIMES ANNUALLY
1 Year Subscription—$10.00. Sample, $1.50

REMIT TO:
THE FINE TOOL JOURNAL
RD #2 — Dept. W
Poultney, VT 05764

A Family Tradition Since 1916

Kuempel Chime

BUILD THE FINEST
We Know You Can Do It!



Easy to assemble quality Red-i-Kut Clock kits. A variety of designs hand made by our Grandfathers in solid ¾" cherry, oak or walnut with beveled glass.

Tubular Bell or Rod movements. Handcrafted pendulums. Original bronze etched dials and hand painted moonwheels.

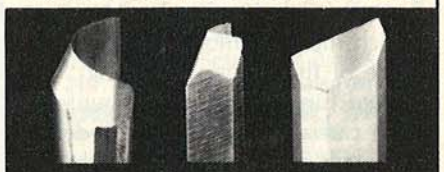
Or start from scratch. American Classic Plan - $3.00

Write for Free Literature or Call
1-800-328-6445
Between 8 a.m. & 4 p.m.

Kuempel Chime
Dept. 001, 21195 Minnetonka Blvd.
Excelsior, MN 55331

Pro-Edge®

CONVERT YOUR 1 INCH Sander/Grinder into the IDEAL EDGE TOOL SHARPENER



SUPERB EDGES
ON CHISELS, GOUGES, PLANES AND MANY OTHER TOOLS

Pro-Edge®
attaches with a single screw to Rockwell, Sears, Jet and other machines in minutes

WRITE FOR **FREE** BULLETIN
Send $2.50 for Owner's Manual. Full refund with Pro-Edge order.

Prakto, inc. 313/549-3833
P.O.BOX 1023 Birmingham, Mich. 48012

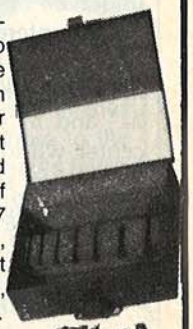
USEFUL TOOLS AT SPECIAL PRICES!

MARPLES CHISEL SET

These famous English made chisels are bevel edged with straight grained ash handles. Hardened and tempered Sheffield forged steel sharpened and honed to a perfect cutting edge. Heavy steel ferrules permanently mate the blades to the handles. Ideal for light mallet work as well as hand chiseling. Set comes complete with a protective soft vinyl case which hangs up for convenience. Blade guards are included with the set. 4 pc. set: ¼", ½", ¾", 1".

4 Pc. Chisel Set **$18.95** ppd

FORSTNER BIT SETS



We've sold thousands of these bits. Woodworkers have been delighted with their ability to cleanly drill flat bottomed holes, part of a circle or very thin materials. These bits leave a smooth edge even when drilling end grain — perfect for doweling. And now we've added another great feature. A sturdy metal case with a cushioned interior to protect the cutting surfaces. Best of all, we include the case at no extra charge! 7 pc. set consists of 1/4", 3/8", 1/2", 5/8", 3/4", 7/8", 1" with a metal case. A 15 pc. set (without a case) includes the above plus1-1/8", 1-1/4", 1-3/8", 1-1/2", 1-5/8", 1-3/4", 1-7/8" and 2".

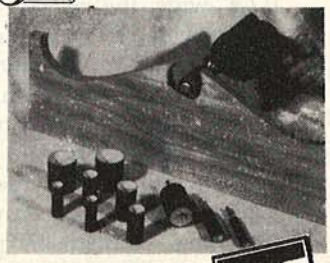
7 Pc. Set with Case **$49.95** ppd
15 pc. set **$169.95** ppd

DELUXE SQUARE RECESS WOODSCREW KIT

These screws shouldn't be confused with cheap hardware store screws — the soft kind with the shiny plating. All of our screws are hardened and tempered with a black oxidized finish to retard rusting. Widely used in furniture and cabinet making, the square recess helps prevent slippage (and damage) and lets you sock screws down tight. Thin shank eliminates the need for oversized pre-boring. Set consists of 600 #8 screws (100 each 1", 1¼", 1½", 2", 2½", 3"), hand screwdriver, power drill bit and a 6 bin unit which can be wall mounted or stacked on a bench.

Square Recess Kit **$19.95** ppd
(Also available in Phillips for $17.95)

DRUM SANDER SET



Use your drill or flexible shaft tool to sand contours and holes, grind and polish tools and perform many difficult finishing jobs. Sanding bands easily mount to our expandable drums without adhesive. Standard 15 pc. set contains 5 drums, 1 fine and 1 coarse band in sizes ½" x ½", ¾" x 1", 1" x 1", 1½" x 1½", 2" x 1½". Wide (2") band 12 pc. set contains 4 drums, 1 fine and 1 coarse band in sizes ½" x 2", ¾" x 2", 1" x 2', 1½" x 2". Refills available.

Standard Set **$10.95** ppd
Wide Set **10.95** ppd

TREND-LINES, INC. 375J Beacham St., Chelsea, MA 02150
800-343-3248 Nationwide **800-322-6100** Mass.

VISA master charge

Freight prepaid on orders of $35.00 or more — add $2.00 for orders under $35.00.

If ever there was a topic guaranteed to generate discussion among woodworkers, glue squeeze-out is it. We've talked to experts, then arrived at our own solution.

Ask three or more woodworkers the above question and you'll probably get three different answers: "right away," "after a few minutes," and "after the glue has dried." Chances are equally good that the person who gives you any of the three answers will have a rationale that seems plausible. In short, the subject of glue squeeze-our is one that's sure to generate some good discussion among anyone who has worked with wood.

Whenever you clamp two pieces of wood together with glue in between, you're dealing with variables in clamping pressure, consistency and amount of glue, and species of wood. All of these factors can affect the amount of adhesive that may ooze out of the joint, as well as the technique you use to remove it.

Some Squeeze-out Is Good

A little glue squeeze-out — a few tiny droplets or dribbles along the joint — is a sign of a good glue-application job. No squeeze-out means you might have applied too little glue, creating a "starved," potentially weak joint. All the experts agree on this point.

Glue squeeze-out becomes a problem only if you can't completely remove all the excess glue from the wood surface. Any glue that remains on or in the wood fibers can hamper application of finishing material. You know you must remove all the glue that gets squeezed out from the joint, but when and how?

We decided to do a little research on the subject.

We restricted our investigation to two of the more frequently used glue types: the aliphatic resins (the yellow mixtures such as Borden's Elmer's Professional Carpenters Wood Glue and Franklin Titebond) and the polyvinyl acetates (the white glues such as Elmer's Glue-All and Franklin Evertite). These adhesives are similar in consistency and application, although they differ slightly in strength and setting time. All dry within minutes of one another, ooze out from joints

Continued on page 114

ROUTER AND SHAPER BITS

BIT 24

Zac Products Inc. has developed a highly selective line of quality router and shaper bits. Our bits are built to exact tolerances. Only the best grades of carbide are brazed to alloy steel blanks. After concentric grinding the shapes are cut and the edges are lapped. The final honing forms a razor sharpness that will outperform other cutters, often eliminating sanding altogether. We feel that seeing is believing and we want you to try our three most popular bits at a special introductory price of **$26.50** delivered. As a bonus you will receive our 32 page illustrated catalog which contains 64 types of router bits, 58 types of shaper cutters, 4 types of router bit adaptors for the shaper, along with hundreds of molding shapes, door style & rail sets, raised panel cutters and much more. All at the best possible prices.

BIT 36

BIT 2

ROUTER BIT SALE (1/4" SHANK)

BIT #	CUTTING LENGTH	DIAM./ RADIUS	BIT LENGTH	NAME	
2	1"	1/2"	2 1/2"	STRAIGHT CUT	ALL THREE BITS DELIVERED **$26.50**
24	1/2"	3/16"	1 3/4"	ROUND OVER	
36	1"	1/2"	2 5/8"	FLUSH TRIM	

TO ORDER YOUR ROUTER BITS FILL IN COUPON BELOW. TO RECEIVE OUR CATALOG SEND A CHECK FOR $1.50 WITH YOUR NAME & ADDRESS.

INSIDE NY STATE **1-800-522-6622**

CALL TOLL FREE

ZAC

PRODUCTS INC.
533 West 34th Street, NYC, NY 10001

OUTSIDE NY STATE **1-800-441-0101**

☐ CHECK OR MONEY ORDER ☐ VISA/MASTERCARD
ACCOUNT NO. _____
☐ CATALOG ONLY: $1.50 EXP. DATE _____
☐ CATALOG PLUS ROUTER BITS 2, 24, & 36: $26.50 ppd.
PHONE NO. (_____) _____
NAME _____
ADDRESS _____
CITY _____ STATE _____ ZIP _____
NY RESIDENTS MUST INCLUDE SALES TAX OF 8¼%

Professional Woodworker's Apron
Top grain leather

Protection of Leather
for 69.95 Shipping P.P.D.
Brochure Available on Request

Name _____
Address _____
City _____
State _____ Zip _____
Visa-M/C card # _____
_____ Ex. Date _____

OCCIDENTAL LEATHER
P.O. Box 364
Valley Ford, CA 94927
707-874-3650
Call for fast service

NOW! REDUCE THE RISK!

WITH THE NEW
MOBILE™ SAWING CENTER

***WITH ANY TABLE SAW**

HTC's new, adjustable, MOBILE stands & outfeed roller tables are designed to hold, mobilize, and to increase the working table surface

- Complete mobility at any location
- One man operation - 4'x8' panels won't tip off
- Improves saw performance

SEND FOR CATALOG
HTC PRODUCTS, INC.
120 E. HUDSON
ROYAL OAK, MI 48067
(313) 399-6185
1-800-624-2027

MAKES IT MOBILE

SHOP TECHNIQUES

Continued from page 113

glue squeeze-out

one another, ooze out from joints similarly, and can be removed with the same tools. So the following comments apply to all of them.

What the Experts Say

Some woodworkers we know wait until the oozed-out glue has dried hard. Then they pick it off with a sharp-bladed tool or sand it away with sandpaper. The secret to the success of this technique is to limit squeeze-out to the tiniest possible beads of glue.

Dr. Robert Snider of Franklin Chemical Industries favors one of two other techniques — depending on the gluing project. Snider, whose doctorate is in chemical engineering, has been at Franklin for over 45 years. More than just the company's glue expert, he's a home craftsman.

"In my own projects," he says, "I usually try to remove excess glue with a metal spatula when the glue becomes the consistency of cottage cheese — that is, after about 5 to 10 minutes." However, Snider says he sometimes removes the glue with a damp sponge immediately as it oozes out.

So does Tom Duncan, section head of the Borden Adhesives Group Development Laboratory. Duncan has bachelor's and master's degrees in forest utilization from the College of Environmental Science and Forestry, State University of New York at Syracuse. He says, "I'd probably wipe off the glue while it was still wet and then sand whatever was left after it had hardened."

Snider's favorite glue-wiping tool is a sponge dampened with water. Duncan uses rags and hot water, rags with hot water and detergent, or rags and ethyl alcohol.

Moisture Affects Wood

Whichever applicator and liquid are used, both men agree, the moisture may raise the wood fibers. But, says Snider, "You always sand afterwards anyway, so that's no problem. Just be sure not to overload the wood with water."

After using a damp rag, Duncan advises, "Wait maybe a couple of days for the wood to reach an equilibrium state with the humidity of the air, then sand. Either alcohol or water could cause the fibers to swell, but alcohol will evaporate sooner."

Won't the water or alcohol carry glue down into the wood, much as the solvent in pigmented liquid stain carries the pigment? Says Duncan: "Maybe, but once you've sanded the wood you'll have sanded off the glue."

Snider notes that too little moisture rather than too much is more likely to be a problem. Using a rag or sponge that's not moist enough, he says, might prompt you to apply too much pressure in removing the glue. And this, he says, can indeed push glue into the wood.

Will removing semi-dry glue with a spatula or other scraper pull glue out of the joint? No way, says Snider. "You simply can't pull the glue out of the joint, and you don't have to worry about making gaps in the glue when you scrape it away. The glue line should be only about two thousandths of an inch thick."

Duncan agrees: "Many people who sell adhesives like to say that the glue is stronger than the wood itself. It really shouldn't pull out of the joint if it's doing its job."

What We've Experienced in Our Shop

Generally, we don't advise waiting until the glue has dried hard. Note the "generally." Sometimes, you might be able to estimate your glue needs exactly and get just a few tiny beads of glue squeeze-out. If you have no more than this, you can wait till the glue has dried and flick off the beads with any sharp tool.

But, as was mentioned earlier, you could be making a serious mistake in trying to limit glue squeeze-out to so small an

amount. Remember the starved joint.

The other extreme is no better. If so much glue oozes out that you'd need a chisel or lots of sandpaper to remove it after it hardened, you're in trouble. Since the completely dry glue is quite likely harder than the grain of the surrounding wood, the adhesive you cut away might take some wood along with it. And if you use a sander, you risk sanding away too much of the wood.

No Water Is Better

We agree to disagree somewhat with both Snider and Duncan regarding use of a damp sponge or rag. We're convinced that the combination of moisture and pressure can indeed push some glue into the pores of the wood. Sanding will remove the glue at the surface, but perhaps not all the glue that was forced down deep. Why take a chance and wait maybe a couple of days for the wood to reach an equilibrium state before you can sand off the residue?

Let Glue Gel

Clean up excess glue after it has gelled a bit but before it has hardened. Follow Snider's advice and wait 5 to 10 minutes (or longer) after clamping. At this point you'll be able to slice away the "cottage cheese" with a dull chisel or other type of scraper.

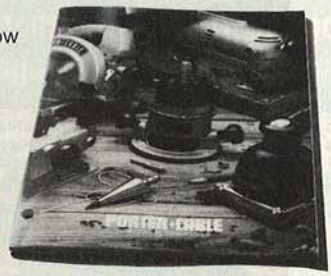
As Duncan puts it, "Scraping the glue off after it has set for a few minutes makes sense. It's sort of a compromise between removing it right away and waiting until it's completely dry. Of course, once you remove the skin that's formed on the surface of the glue, the glue underneath is still wet. But removing it at this point keeps you from smearing the glue all over quite as much."

And by removing as much as you can in this way, you minimize the sanding you'll have to do once the remaining glue has hardened.

Professional and Portable

- Heavy duty router/shaper offers affordable flexibility.
- Equipped with a 1½ H.P. motor but will accommodate all Porter-Cable motors including the 3 H.P. production unit.
- Individually adjustable fences with micro adjustments for complete cutting accuracy.
- Dual starting pin holes for versatile free-hand routing.
- Safety lockable switch.

For more information consult the Yellow Pages under Tools (electric) for your local Porter-Cable Professional Tool Distributor or write for a free, full line product and accessory catalog.



Quality By Design
PORTER·CABLE
PROFESSIONAL POWER TOOLS
P.O. Box 2468 • Advertising Dept. • Jackson, TN 38302-2468

How To Avoid Excessive Squeeze-Out

- Check that joint parts fit well by clamping together before gluing. Open pores of wood by sanding.
- Use a brush about the same width as the wood to spread glue. Glue directly from a squeeze bottle should be applied in zig-zag lines to both surfaces, then the pieces rubbed together to distribute.
- It's best to apply glue to both surfaces thinly and allow to partially set before joining pieces.
- Check drying or "set" time of glue you're using. Some set up faster than others. Work to the pace of the glue.
- Don't apply too much clamp pressure. The object is to create a thin film of glue between parts. Too much pressure will squeeze the glue out, resulting in a starved joint. Usually, finger tight will do.

Information

WORTH WRITING FOR

You can get useful ideas and product information by mail. Use the coupon in this section to order your choice of literature listed below.

WOODWORKERS' PLANS AND SUPPLIES — Wood projects are simplified with the high quality plans, specialty hardware and other supplies offered by Armour Products. Over 100 plans are available for making toys, desks, clocks, pool tables, lamps, chests, and other furniture. Movements, dials, moldings, ornaments, and hardware also available. ARMOR PRODUCTS. $1.00. *Circle No. 4.*

SCROLL SAW AND LATHE INFORMATION — More than 20 pages of information, including full-color photos, on HEGNER precision scroll saws, HEGNER lathes, and HEGNER duplicators. Find out why these machines are considered state of the art, and what to look for when shopping for scroll saws or lathes. AMI, Ltd. $1.00. *Circle No. 5.*

WOODWORKING PLANS FOR HOMESHOP — Stacking bookcase, curio cabinet, grandfather clock, Bentwood cradles, and much more. Step-by-step detail procedural plans include material list, suggested tools, and fully illustrated steps. Price of brochure is refunded with first purchase. ABOUT TIME PLANS. $1.00. *Circle No. 6.*

HOW-TO-CLAMP-IT CATALOG — 40-page illustrated catalog describes over 40 different styles of genuine "Jorgensen" and "Pony" hand clamps, including clamp selection guide, working advantages, and do-it-yourself project applications. AJUSTABLE CLAMP CO. Free. *Circle No. 7.*

TOOL CATALOG — Available from Anglo American Enterprises, the world famous Recod Marples Tool Catalog featuring the finest woodcrafting tools available. Send for catalog and price list. ANGLO AMERICAN ENTERPRISES CORP. $2.00. *Circle No. 8.*

SHIP MODEL KITS — Fully illustrated 32-page catalog of scale ship model kits from America's oldest model ship company. Build a beautiful museum quality model ship with the simplest tools and average skills. BLUEJACKET SHIP CRAFTERS. $2.00. *Circle No. 9.*

WOODWORKING EQUIPMENT — More than 75 pages filled with woodworking machinery, portable power tools, and supplies. Detailed information on all types of equipment for professional and home shop needs. Powermatic, Rockwell, Hitachi, Makita, and more. BRATTON MACHINERY AND SUPPLY, INC. $3.00. *Circle No. 10.*

BOOS BUTCHER BLOCK FURNITURE — Full-color literature featuring Butcher Block tables and chairs and gourmet items including tea carts, microwave oven tables, hostess carts, Butcher Block and cutting boards. JOHN BOOS & CO. $1.00. *Circle No. 11.*

CLOCK MOVEMENTS CATALOG — The 55-page catalog contains over fifteen different quartz clock movements, including pendulum, strike, and chime movements. Also shown are dials, hands, numerals, and accessories. It features movements made in Japan by the world's largest producer of quartz timepieces. CAS-KER CO. $1.00. Circle No. 12.

MAKE WOOD TOYS AND PROJECTS — Hundreds of plans, kits, colored and unfinished hardwood parts for all types of toy, craft, and furniture projects (Colonial, Shaker, Primitive, and Modern.) For novice to experienced woodworkers. Send for beautifully illustrated color catalog. CHERRY TREE TOYS INC. $1.00. *Circle No. 15.*

WOODWORKERS TOOLS AND MATERIALS — 116-page catalog offers fine hardwoods, veneers, inlays, picture molding, wood finishes, carving blocks, cabinet hardware, and cane. Specialty woodworking tools, shop equipment, plans, instruction books. ALBERT CONSTANTINE AND SON INC. $1.00. *Circle No. 20.*

DO-IT-YOURSELF LUMBER DRYING — This 22-page booklet *Kiln Chamber Construction Guide and Operation Manual* is designed for the individual wishing to dry his own lumber with a minimum investment of money, time, and space. Included are principles of dehumidification lumber drying, selection of which dryer is best for you, and kiln chamber plans and construction information. Also you will receive a questionnaire you can fill out and return. Once completed and returned you will receive free a computerized evaluation of your drying needs including investment considerations, operating costs, and payback. EBAC OF AMERICA, INC. $3.00. *Circle No. 22.*

GET INTO THE WOODS WITH USE — Educational Lumber Company, suppliers to school shops for 30 years, now offers you top grade Appalachian and imported hardwoods. We also handle softwoods, veneers, and turnings. All our products are kiln dried. Send for our catalog and receive a bonus: a set of 6 furniture plans. EDUCATIONAL LUMBER CO., INC. $1.00. *Circle No. 25.*

STATIONARY POWER MACHINES — Available from Elektra Beckum U.S.A. Corp. — advanced technology woodworking stationary power machines with the unique Unimex Motor interchangeable concept. For complete information on Jointer/Planer, Bandsaw, Dust Extractor, Spindle/Moulder, Lathe and Combi Saw send for our catalog. ELEKTRA BECKUM U.S.A. CORP. $1.00. *Circle No. 27.*

COMPLETE FASTENERS FOR THE HOME WOODWORKER — Specialized fasteners for all types of wood — particleboard screws, hardwood and softwood screws. We have all lengths from ½ in. to 3 in. in various diameters. All types of packaging available including our Handipak designed for the home, small volume user. Send for complete color brochure. A must for the home woodworker. EQUALITY SCREW CO., INC. Free. *Circle No. 28.*

RIPSTRATE SAVES FINGERS — for table saw and radial arm saw users. Brochure describes the RIPSTRATE and shows how it gives straighter cuts, speeds, the work, prevents kickbacks, and keeps hands away from the blade. FISHER HILL STUDIOS, INC. Free. *Circle No. 29.*

FURNITURE PLANS, FULL-SIZE — For the do-it-yourselfer with easy step-by-step directions. Illustrated list and description of 12 furniture designs, mostly Early American: desks, cabinets, tables, storage bed, etc. NEW! You can make each piece in 2 or 3 sizes. All dimensions shown in catalog. FLEXIPLANS. Free. *Circle No. 30.*

CUTTING TOOLS — Freud, USA provides the finest value in carbide cutting tools. From saw blades and boring bits to shaper heads and router bits. Our newest product — shaper heads for the half inch shaper spindle. Send for complete catalog. FREUD, USA. $5.00. *Circle No. 35.*

1984-85 MASTER CATALOG — contains 212 pages of the finest in woodworking hand tools, machinery, and finishing supplies plus over 125 books. Of particular note is the selection of Japanese tools. The format is all four-color. GARRETT WADE CO. $3.00. *Circle No. 40.*

INDUSTRIAL GRADE CARBIDE ROUTER BITS — Delta-type three wing shaper cutter and two-wing boring bits at low prices. Send for complete brochure and price list. Price of brochure refundable with first order. H & S TOOL CO. $1.00. *Circle No. 43.*

BRASS FURNITURE HARDWARE — This 36-page catalog shows over 500 items of authentic reproduction hardware from the 1700's and on into this century. These superior drawer pulls, knobs, hinges, finials, and other hardware items will greatly improve the appearance of your furnishings. HORTON BRASSES. $2.00. *Circle No. 45.*

THE FINE TOOL JOURNAL — Published 10 times per year, this publication will keep you up to date with the many aspects of the world of antique and obsolete hand tools. Tools are offered for sale, books on tools are reviewed and sold, auctions are reviewed, articles on identification, values, and history. Send for sample copy. IRON HORSE ANTIQUES, INC. $1.50. *Circle No. 50.*

HOME CIDER PRESS KITS — Solid maple kits of full-size, working cider and wine press. Complete kits includes all wood parts pre-cut, all hardware, and plans. Low cost basic kit has all the hardware, you supply the wood. Fully assembled model also available. Makes gallons of sweet cider with incredible ease. Send for literature. JAFFREY MFG. CO. $1.00. *Circle No. 55.*

QUALITY CLOCK KITS AND PLANS — Handmade and semi-assembled of carefully selected ¾ in. cherry, oak, or walnut with beveled glass. Or build from "scratch" using our detailed plans and trim pieces. Choice of quality movements. Established in 1916. KUEMPEL CHIME CLOCK WORKS. Free. *Circle No. 57.*

FREE LITERATURE — New brochure showing all moisture meters and accessories for moisture meters such as interchangeable electrodes and probes and cables for in-kiln moisture monitoring. Complete line of moisture meters include: Pocket-size Mini-Ligno with LED readout 6%-20%, Mini Ligno E 6%-36%, analog display meters 4%-30%, 60% and a digital moisture meter with built-in compensation for different wood temperatures. LIGNOMAT USA, LTD. Free. *Circle No. 58.*

TIPS ON WOOD FINISHING — A comprehensive, 22-page booklet includes numerous tips that save time and trouble for do-it-yourselfers. Information ranges from how to apply a preservative stain to a house exterior to restoring the finish of a priceless antique. Also included is a chart showing full range of both interior and exterior colors available. The name of your nearest dealer is provided. MINWAX CO., INC. Free. *Circle No. 60.*

GERMAN STEEL TOOL CATALOG — 24 pages packed with finest quality tools manufactured in Germany. Included are thousands of unusual and hard-to-find chisels, gouges, parting tools, etc. — all hardened and tempered to hold a keen edge and give a lifetime of dependable service. FRANK MITTERMEIER, INC. Free. *Circle No. 61.*

MITY-TITE SYSTEMS — No job is too tough for Mity-Tite. If you want to assemble furniture, fabricate most any item, frame a picture, work on your boat, do home improvements, do glueing, banding or any one of a thousand and one tasks, you need MITY-TITE SYSTEMS. Free. *Circle No. 62.*

WOOD CARVING — You can obtain information on learning woodcarving by sending for our literature. The offer includes sample copy of *The Mallet Magazine* and two lesson sheets on carving. NATIONAL CARVERS MUSEUM. $1.00. *Circle No. 63.*

WOOD WORKERS—CARVERS SUPPLIES — Catalog on hard to find items. E-Z pneumatic drum sander, Foredom tools and accessories, Detail Master woodburning unit, abrasive cartridge rolls, books, patterns, much more. NORTH WEST CARVING SUPPLIES. $2.00. (Refundable). *Circle No. 64.*

OCCIDENTAL LEATHER OFFERS FOR HOME WOODWORKER — A wide line of high quality and uniquely designed tools bags and holders for the woodworking and construction industry. Full color brochure. OCCIDENTAL LEATHER CO. Free. *Circle No. 65.*

TIMBERS COUNTRY STORE — Catalog features hundreds of woodworking supplies, toy patterns, furniture patterns, tool use and instruction books, woodworking pattern books, hardwood toy and furniture parts plus many hard to find tools and shop supplies. TIMBERS COUNTRY STORE. $1.00. *Circle No. 66.*

WOOD SCREWS, TOOLS, CARBIDE BLADES, BITS, AND SANDING BELTS — Tools U.S.A., nationwide supplier to America's largest cabinet and furniture manufacturers, is now selling direct to the public at wholesale, mail order prices. Send for complete catalog. TOOLS U.S.A. $2.00. *Circle No. 67.*

PATTERNS FOR BETTER LIVING — Picturing over 700 woodworking and handicraft projects including indoor and outdoor furniture, toys, garden and recreational items, soft sculptures, tole paintings, quilting, and much more. Patterns, plans, and

TO ORDER THESE BOOKLETS, USE COUPON ON PAGE 118

ings, quilting, and much more. Patterns, plans, and guide books include step-by-step directions. U-BILD. $1.95. *Circle No. 68.*

WOODCARVING TOOLS — Whittlers and carvers — Warren Tool Co. offers a catalog for you full of whittling and carving hand/power tools, books, stones, wood, and supplies. Since 1927, the finest in woodcarvers tools. WARREN TOOL CO., INC. 60¢. *Circle No. 70.*

BEAUTIFUL WOOD FINISHING — with Watco Danish Oil Wood Finish. Full-color *How to Beautifully Finish Wood* booklet enables anyone to create professional finishes the first time with all types of wood. One application of Watco Wood Finish seals, primes, finishes, hardens, protects, beautifies, penetrates deeply into the wood; outlasts surface coats three to one. Eight attractive Danish Oil colors now available. Eliminates pre-staining. WATCO-DENNIS CORP. Free. *Circle No. 72.*

FURNITURE KITS — Queen Anne period antique reproduction furniture kits and cabriole legs carefully crafted in Black Walnut, Cherry, and Honduras Mahogany. Kits include illustrated instructions, hardware, and brass. Send for color brochure. WINDSOR CLASSICS. $1.00. *Circle No. 75.*

THE WING M-100 ROUTER TEMPLATE — FAST AND EASY PRODUCTION FOR SMALL, MEDIUM, OR LARGE PANELS — Both versatile and fast, the M-100 Router Template and its selection of interchangeable design units, allows competent production of a wide variety of ornamental borders by either professionals or home craftsmen. It can be used with any make of portable router to decorate a door or drawer in just 30 seconds. Send for literature. WING SALES AND DIST. CO. Free. *Circle No. 76.*

WOOD FINISHING SUPPLIES — A 36-page catalog of everything needed for finishing wood. From strippers, abrasives, stains, shellacs, varnish, lacquer, oil finishes, solvents, thinners, rubbing mediums, books, brushes, touch-up items, respirators, tack rags, to gold leaf and gilding supplies. The first 11 pages of this catalog are devoted to helpful information on how to use these materials. WOOD FINISHING SUPPLY CO., INC. $2.50. *Circle No. 80.*

WOOD TENDER RELEASES NEW CATALOG — A new 42-page catalog of woodworking tools, chair caning reeding and rushing supplies, entry hardware, furniture brass, Wood Tender finishing products and more, is now available. The catalog cost will be credited toward the first order. Wood Tender has been servicing woodworkers for over 30 years. WOOD TENDER. $2.00. *Circle No. 81.*

WOODWORKERS CATALOG — More than a catalog — it's one of the best sources for quality woodworking tools. You'll find everything from bit braces to wood borers, from saws to sharpening stones. Every product is sold satisfaction guaranteed. WOODCRAFT SUPPLY CORP. Free *Circle No. 85.*

LIVOS NON-TOXIC FINISHES — Safe for children, animals, and plants. Send for mail order catalog on: oil finishes, waxes, shellacs, lacquers, polishes, stain and wood preservatives. Send also for your mail order catalog of quality tools for professionals and craftsmen. WOODPECKER'S TOOLS, INC. Free. *Circle No. 87.*

WOODWORKERS SUPPLY — Offers high quality tools and supplies for skilled, amateur, and professional woodworkers. Our complete catalog includes machinery, hand tools, plans, router bits, shaper cutters, wood specialities, and more. For your two year subscription send to WOODWORKERS SUPPLY OF NEW MEXICO. $2.00. *Circle No. 88.*

QUALITY AMERICAN-MADE WOOD TURNINGS — such as shaker pegs, spindles, toy wheels, toy parts, craft items, and dowel rods in birch, oak, walnut, and cherry. Send for complete 32-page catalog. WOODWORKS. $1.00. *Circle No. 89.*

PROBLEM SOLVING CATALOG — Winstead is your ultimate shop-at-home guide to problem solving tools for your home, workshop, garden, and auto. You'll find just the right item you need to create, repair, adjust, build, and enhance. Our products are comfortable to use and built to last. Satisfaction guaranteed. WINSTEAD. Free. *Circle No. 90.*

WOODTURNING INSTRUCTION AND SUPPLIES — Brochure describes program of personal instruction at our studio, with full accomodations. Also Myford lathes, Sorby tools, doublefaced tape, chucks, and our newsletter for turners. RUSS ZIMMERMAN. 40c. *Circle No. 95.*

Have a problem with your subscription?

We want to solve it to your complete satisfaction, and we want to do it fast. Please write to:

Robert Austin, Better Homes and Gardens® WOOD, P.O. Box 10628, Des Moines, Iowa 50336

You can help us by attaching your magazine label here, or copy your name and address as it appears on your label. Send this along with your correspondence.

Name
Address Apt. #
City State Zip

Moving?

Simply attach the mailing label from this magazine and write in your new address below. (Please allow 4 - 8 weeks.)

Your New Address Goes Here

Name
Address Apt. #
City State Zip

☐Renewal
☐New Order

Better Homes and Gardens® **WOOD**
P.O. Box 10628 • Des Moines, Iowa 50336

MAKITA • PORTER CABLE • ROCKWELL • BOSCH • LION

HILLER HARDWARE CO.

ASSURES YOUR SATISFACTION ON ANY ITEM PURCHASED FROM US! WE CAN SHIP YOUR BANK CARD ORDER TODAY

freud INDUSTRIAL SAW BLADES

10" CARBIDE TIPPED BLADES

Blade	Description	Teeth	List Price	Hiller's Price
LU72	General Purpose	40	68.58	39.50
LU73	Cut-Off	60	79.65	40.95
LU81	General Purpose	40	69.30	40.95
LU82	General Purpose	60	86.50	42.75
LU84	Combination	40	70.99	39.50
LU84	Combination	50	74.51	42.75
LU85	Combination	80	110.88	73.90
LM72	RIP	24	64.85	43.95

5/8" BORE STANDARD, ADD $8.00 FOR ANY OTHER BORE

- WE HONOR ALL FREUD NATIONALLY ADVERTISED SPECIALS
- CALL OR WRITE TODAY FOR CURRENT PRICES ON OTHER TOOLS/ACCESSORIES
- PRICES QUOTED, DELIVERED PREPAID
- VISA, MASTERCARD ACCEPTED

HILLER HARDWARE CO.

1411 ASSEMBLY STREET, P.O. BOX 1762
COLUMBIA, S.C 29202-1762
803-779-3131 EXT. 12

YOUR WOODWORKING SPECIALIST IN THE SOUTHEAST

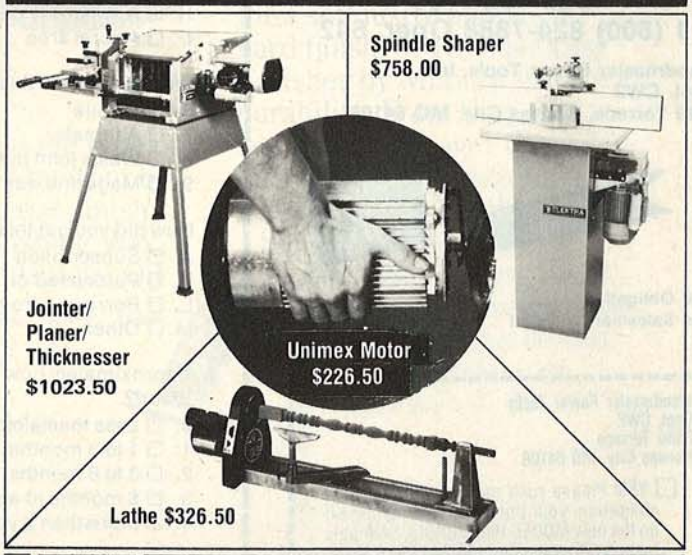
MARPLES • RECORD • WATCO • NU-LIFE • DOWEL-IT-CLESCO • GILLESPIE • FREUD

BLACK & DECKER • MILWAUKEE • FORSTNER • JORGENSEN • 3M • W.L. FULLER

HEGNER • STANLEY • GREENLEE • HENCKELS • MERIT

NEW! ELEKTRA U.S.A.

The advanced technology woodworking system. One motor (2½ h.p.) powers a complete range of woodworking machines.



Not shown: 12", 3 h.p. "Combi" Table Saw—only $380.00
Also available: Bandsaws, Dust Extractor. All prices F.O.B. Somerdale, NJ.
Dealer inquiries welcome. Call toll free 1-800-223-8600
Send $1.00 for full color catalog to:
ELEKTRA U.S.A., P.O. Box 24, Somerdale, NJ 08083

TO ORDER THESE BOOKLETS, USE COUPON ON PAGE 118

THE SAW THAT TURNS BEGINNERS INTO EXPERTS!

Use this high-precision saw to make hundreds of profitable, unusual items . . . toys, name-bars, filigree work, clocks, holders . . . the list is nearly endless! Because the Model 1600 cuts so smoothly, sanding is virtually unnecessary!

BUILT FOR THE PROS!

The new Woodmaster Model 1600 gives you all the features found in more expensive machines including a big, 16-in. throat capacity, 2-in. cutting depth, a generous, oversize worktable, ball-bearing drive . . . and much more!

FULL TILTING WORKTABLE!

Unlike any other scroll saw, the Woodmaster's table tilts and locks in any position up to 45° right or left. This means you can produce work on the Model 1600 impossible to duplicate on any other parallel or C-arm scroll saw! Can be ordered complete with motor, stand and dust blower. Easy Terms.

30-DAY FREE TRIAL!

Send For Complete Facts! See how you can use the Woodmaster Model 1600 in your own shop for one full month completely without risk! MAIL COUPON TODAY or:

Call Toll-Free
1 (800) 824-7888 Oper. 642

Woodmaster Power Tools, Inc.,
Dept. CW2
2849 Terrace, Kansas City, MO 64108

No Obligation . . .
No Salesman Will Call

Woodmaster Power Tools
Dept. CW2
2849 Terrace
Kansas City, MO 64108

☐ **YES!** Please rush me, free and without obligation, your Complete Information Kit on the new MODEL 1600 SCROLL SAW plus facts on Woodmaster's 30-Day FREE TRIAL Money-Back Guarantee!

Name _____
Address _____
City _____
State _____ Zip _____

Information

WORTH WRITING FOR

Better Homes and Gardens®
WOOD, September/October 1984
P.O. BOX 2051
CLINTON, IA 52732

TO ENSURE PROMPT HANDLING OF YOUR ORDER FOLLOW THESE INSTRUCTIONS:

- **Circle your choices**
- **Enclose cash, check, money order for cost of booklets plus $1.00 service charge (no stamps/foreign)**
- **Send coupon and remittance to address above**
- **ALLOW 4-6 WEEKS FOR DELIVERY**
- **Coupon expires October 21, 1985**

FREE LITERATURE Circle numbers below corresponding to items in this issue. Please include $1.00 for handling charge.

7. 28. 29.	30. 57. 58.	60. 61. 62.	65. 72. 76.	85. 87. 90.		

PRICED LITERATURE Numbers below refer to items on which there is a charge. Please include proper remittance.

4. . . . . $1.00 5. . . . . $1.00 6. . . . . $1.00 8. . . . . $2.00 9. . . . . $2.00	10. . . . . $3.00 11. . . . . $1.00 12. . . . . $1.00 15. . . . . $1.00 20. . . . . $1.00	22. . . . . $3.00 25. . . . . $1.00 27. . . . . $1.00 35. . . . . $5.00 40. . . . . $3.00	43. . . . . $1.00 45. . . . . $2.00 50. . . . . $1.50 55. . . . . $1.00 63. . . . . $1.00	64. . . . . $2.00 66. . . . . $1.00 67. . . . . $2.00 68. . . . . $1.95 70. . . . . 60¢	75. . . . . $1.00 80. . . . . $2.50 81. . . . . $2.00 88. . . . . $2.00 89. . . . . $1.00	95. . . . . 40¢

Name (please print) _____
Address _____
City _____
State _____ Zip Code _____

I AM ENCLOSING:
$ _____ for priced items
$ 1.00 for handling
$ _____ total remittance

OUR EDITORS INVITE YOU TO HELP THEM BY ANSWERING THESE QUESTIONS:

1. What is the age of the head of your household?
   A. ☐ 18-24
   B. ☐ 25-34
   C. ☐ 35-49
   D. ☐ 50-64
   E. ☐ 65 or older

2. What is the highest level of education reached by the head of your household?
   1. ☐ Graduated college
   2. ☐ Attended college
   3. ☐ Graduated high school
   4. ☐ Attended high school
   5. ☐ Did not attend high school

3. Do you live in:
   F. ☐ A large city
   G. ☐ A suburban area of a large city
   H. ☐ A small city or town (not a suburb)
   I. ☐ A rural area

4. Who purchased this copy of *Better Homes and Gardens Wood*?
   6. ☐ A male
   7. ☐ A female
   8. ☐ Was a joint purchase by a man and a woman
   9. ☐ Magazine was not purchased but was borrowed from someone else

5. How did you get this copy of *Wood*?
   J. ☐ Subscription
   K. ☐ Purchased on newsstand or woodworking store
   L. ☐ Borrowed from a friend
   M. ☐ Other

6. Approximately how long do you expect to keep this issue of *Better Homes and Gardens Wood*?
   0. ☐ Less than a month
   1. ☐ 1 to 3 months
   2. ☐ 3 to 6 months
   3. ☐ 6 months to a year
   4. ☐ More than a year

7. In which of the following categories is your annual household income before taxes?
   N. ☐ Under $15.000
   O. ☐ $15,000 to $24,999
   P. ☐ $25,000 to $34,999
   Q. ☐ $35,000 to $49,999
   R. ☐ $50,000 to $74,999
   S. ☐ $75,000 to $99,999
   T. ☐ $100,000 or more

MINWAX® PRESENTS:

THREE EASY STEPS TO FINE WOOD FINISHING

There is no simpler way to get a truly fine wood finish.

First, sand with successively finer grades of sandpaper to produce a smooth, bare wood surface.

Then, in one easy step, stain *and seal*, using Wood Finish by Minwax. It penetrates deep into fibers to become an integral, breathing part of the wood, not just a surface film.

Lastly, choose the type of extra protection you want by applying a protective finish by Minwax...Finishing Wax for a rich lustre, Antique Oil for a soft lustre and hard finish, or Polyurethane Finishes by Minwax for extra durability. From first step to last, you'll discover the difference Minwax quality makes.

Free 22-page Booklet

Send for "Tips on Wood Finishing" today. You'll see that Minwax products help you do fine wood finishing as easy as 1, 2, 3.

Minwax Company, Inc., Dept. WM-94
Box 995, Clifton, NJ 07014

Please send free booklet.

Name

Street

City State Zip

MINWAX® AMERICA'S FAVORITE WOOD FINISH FOR 80 YEARS.

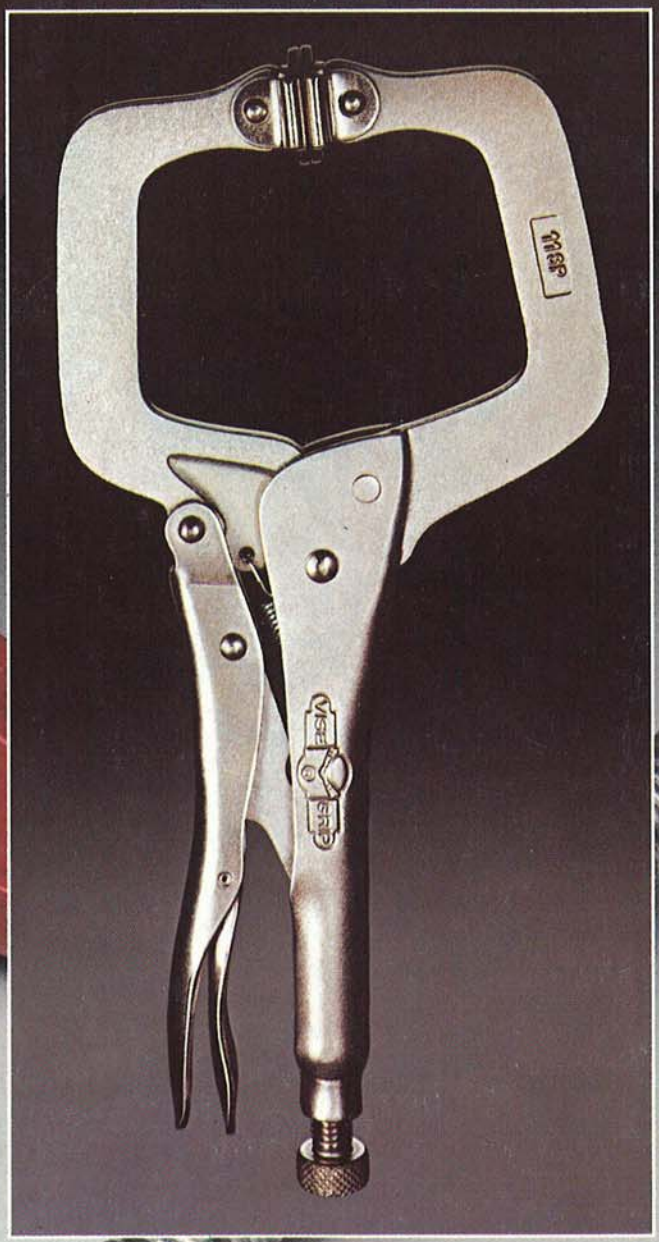
®Minwax is a registered trademark. ©1983 Minwax Company

WHY GO ROUND AND ROUND WITH OLD-FASHIONED 'C' CLAMPS?

Position the old-fashioned 'C' clamp with one hand. Tighten it with the other hand. Then loosen it. Reposition it. Retighten it...

Why bother? New VISE-GRIP® locking 'C' clamps with swivel pads do dozens of wood crafting jobs faster and easier. And they won't mar your work because the self-leveling swivel pads grip even the softest woods smoothly and firmly.

New VISE-GRIP locking 'C' clamps with swivel pads are available in 6", 11" and 18" lengths. Pick one up today wherever quality tools are sold.



VISE-GRIP®

© 1984 Petersen Mfg. Co., Inc.
DeWitt, Nebraska 68341